

LPDES PERMIT NO. LA0004464, AI No. 1396

LPDES FACT SHEET and RATIONALE
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

- I. **Company/Facility Name:** Exide Technologies, Inc.
Baton Rouge Smelter
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Baton Rouge, Louisiana 70807
- II. **Issuing Office:** Louisiana Department of Environmental Quality
(LDEQ)
Office of Environmental Services
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Date Prepared: February 16, 2006

IV. **Permit Action/Status:**

A. Reason For Permit Action:

Proposed reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46*.

- * In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.2301.F, 4901, and 4903.

- B. **LPDES permit:** Effective date - April 1, 2001
Expiration date: March 31, 2006
EPA has not retained enforcement authority.

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- C. Date Application Received: The permit renewal application was received by this Office on December 30, 2005. Supplemental information needed to complete the permitting process was received on January 11, 2006, March 10, 2006, and March 17, 2006.

V. Facility Information:

- A. Location - 2400 Brooklawn Drive in Baton Rouge, East Baton Rouge Parish (Latitude 30°34'59", Longitude 91°14'33")
- B. Applicant Activity - According to the application, Exide Technologies, Inc., Baton Rouge Smelter, is a secondary lead smelter and refinery that recycles spent lead acid batteries and inorganic lead-bearing wastes into metallic lead in the form of lead pig and block ingots. The product lead is sold to customers for use in making batteries, weights, bearings, ammunition, and chemicals.
- C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903)

Guideline

Non-Ferrous Metals Manufacturing
(Secondary Lead Subcategory)

Reference

40 CFR 421, Subpart M

Other sources of technology-based limits:

Current LPDES permit (effective April 1, 2001)
Best Professional Judgement

- D. Fee Rate -
1. Fee Rating Facility Type: Major
 2. Complexity Type: VI
 3. Wastewater Type: II
 4. SIC code: 3341
- E. Continuous Facility Effluent Flow - 0.335 MGD, 30-Day Maximum

VI. Receiving Waters: Bayou Baton Rouge

- A. TSS (15%), mg/L: 12
- B. Average Hardness, mg/L CaCO₃: 41.53
- C. Critical Flow, cfs: 0.7
- D. Mixing Zone Fraction: 1
- E. Harmonic Mean Flow, cfs: 1.73
- F. River Basin: Mississippi River, Subsegment No. 070203
- G. Designated Uses:
The designated uses are primary contact recreation, secondary contact recreation, and propagation of fish and wildlife

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Information based on the following: LAC 33:IX Chapter 11 and memorandum from Brian Baker to Sonja Loyd dated February 17, 2006. Hardness and 15% TSS data came from ambient sampling site no. 1098 on Bayou Baton Rouge located at bridge 2.8 miles north of Alsen and 2.3 miles southwest of Irene. The critical and harmonic mean flows were taken from the permittee's November 22, 2000 Fact Sheet. Effluent hardness was provided in a letter (dated December 13, 1999) from the permittee to this Office.

VII. Outfall Information:

Outfall 001

- A. Type of wastewater - Non-contact cooling water, VSA O₂ plant overflow (non-contact cooling water), post first-flush stormwater runoff, and previously treated effluent from Internal Outfall 101
- B. Location - At the point of discharge from the concrete weir prior to combining with other waters (Latitude 30°35'08", Longitude 91°14'44")
- C. Treatment - None
- D. Flow - Continuous, 0.335 MGD, 30-Day Maximum
- E. Receiving waters - Bayou Baton Rouge
- F. Basin and subsegment - Mississippi River Basin, Subsegment No. 070203
- G. Effluent Data - The effluent data are contained in Appendix C.

Internal Outfall 101

- A. Type of wastewater - Treated combined process wastewaters, sanitary wastewater, leachate from a closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2

[NOTE: "First-Flush" stormwater runoff consisting of the first 1-inch of precipitation from the 10.4-acre production area is collected via a gravity collection system and treated by components of the wastewater treatment plant. "Post First-Flush" stormwater runoff is diverted directly to Outfall 001.]

- B. Location - At the point of discharge from the wastewater treatment plant prior to combining with the effluent from Outfall 001 (Latitude 30°35'08", Longitude 91°14'39")

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- C. Treatment - Chemical precipitation, flocculation, sedimentation, filtration, and neutralization
- D. Flow - Continuous, 0.198 MGD, Long Term Average (LTA)
- E. Receiving waters - Bayou Baton Rouge
- F. Basin and subsegment - Mississippi River Basin, Subsegment No. 070203
- G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 003

- A. Type of wastewater - Non-process area stormwater runoff from the outside equipment storage area behind the No. 2 warehouse and from portions of the closed solid waste landfill
- B. Location - At the point of discharge into Bayou Baton Rouge from the drainage ditch running north from the old equipment storage area behind the No. 2 warehouse prior to combining with other waters (Latitude 30°35'14", Longitude 91°14'33")
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Bayou Baton Rouge
- F. Basin and subsegment - Mississippi River Basin, Subsegment No. 070203
- G. Effluent Data - The effluent data are contained in Appendix C.

VIII. Current Effluent Limits:

See Appendix E - LPDES permit limits

IX. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

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Summary of Proposed Changes From the Current LPDES Permit:

- A. On or about August 6, 2001, this Office was notified by letter (dated July 30, 2001) that the permittee's name was changed from Exide Corporation to Exide Technologies, Inc., effective August 1, 2001.
- B. The permittee's request to add an internal outfall to monitor the effluent (comprised of treated combined process wastewaters, sanitary wastewater, leachate from an closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2) from its wastewater treatment plant has been granted. Therefore, mass limits for TSS, Oil and Grease, Total Antimony, Total Arsenic, Total Lead, and Total Zinc will be established at the internal outfall based on current conditions.

- C. Outfall 001

The description of wastestreams has been modified to reflect non-contact cooling water, VSA O₂ plant overflow (non-contact cooling water), post first-flush stormwater runoff, and previously monitored effluent from Internal Outfall 101

A daily maximum limit of 15 mg/L for Oil and Grease has been added to the draft permit. This limit is applicable for stormwater discharges as per LDEQ Stormwater Guidance. The monitoring frequency will be once per month using a grab sample.

A daily maximum reporting requirement for Total Antimony, Total Arsenic, Total Lead, and Total Zinc has been placed in the draft permit for data gathering purposes. The monitoring frequency will be once per month using a 24-hour Composite sample.

A daily maximum and monthly average reporting requirement for Phosphorus and Nitrate/Nitrite has been placed in the draft permit to gather data for TMDL development. The monitoring frequency will be once per quarter using a grab sample.

A water quality-based daily maximum and monthly average limit for Total Cadmium, Sulfates, and Total Dissolved Solids (TDS) has been established in the draft permit as the result of a reasonable potential analysis. A three year compliance schedule has been incorporated into the draft permit to allow the permittee adequate time to achieve compliance with the water quality-based limits in accordance with LAC 33:IX.1109.D.1. The monitoring frequency for Total Cadmium will be once per quarter using a 24-hour Composite

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sample. The monitoring frequency for Sulfates and TDS will be once per quarter using a grab sample.

The Whole Effluent Toxicity (WET) limit and dilution series for Freshwater Chronic Biomonitoring at Outfall 001 was changed to reflect 18%, 24%, 32%, 43%, and 57% (with 43% defined as the critical dilution/WET limit) instead of 21.1%, 28.1%, 37.5%, 50.0%, and 66.7% (with 50.0% defined as the critical dilution/WET limit). This revision is based recommendations from the Technical Support Section in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. The monitoring frequency shall be once per quarter for the term of the permit. See Appendix D for Biomonitoring Recommendation.

The permittee's request to remove the fecal coliform concentration limits has been granted. Based on the low fecal coliform effluent concentration (14 col/100 mL) provided in the 2006 permit application, fecal coliform sample data reported on the permittee's DMRs for the monitoring period of January 2004 through February 2006, and the low ratio of sanitary wastewater to total wastewater flow (0.7% of total wastewater flow is sanitary wastewater), it was determined that the permittee's sanitary wastewater is not being discharged at a level which would cause or have a reasonable potential to cause or contribute to an effluent violation above any present state water quality standard. Therefore, the fecal coliform limits have been removed from the draft permit.

The permittee's request to change the minimum pH limit from 7.0 s.u. to 6.0 s.u. has been granted. This request is based on conditions that occur when Bayou Baton Rouge back flows into the outfall during low-effluent flow.

D. Internal Outfall 101

The wastestreams contributing to this proposed internal outfall will be as follows: treated combined process wastewaters, sanitary wastewater, leachate from an closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2.

The daily maximum and monthly average reporting requirements for flow have been established in the draft permit in accordance with LAC 33:IX.2707.1.b. The monitoring frequency will be continuously using a recorder.

The daily maximum and monthly average mass limits for TSS are based on the BPT effluent guidelines under 40 CFR 421.132, Subpart M. The

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effluent guidelines under which the permittee's process wastewater is regulated does not include TSS allocations for first-flush stormwater runoff and landfill leachate. Therefore, first-flush stormwater runoff and landfill leachate has been included as part of the process wastewater stream and receives allocations by BPJ for TSS using a daily maximum and monthly average concentration limits of 30 mg/L and 15 mg/L, respectively. The monitoring frequency will be once per week using a 24-hour Composite sample.

Mass limits for Oil and Grease using the standard daily maximum and monthly average concentration limits of 15 mg/L and 10 mg/L, respectively, have been established in the draft permit. The proposed mass limits have been incorporated by BPJ based on the permittee's total process wastewater flow at Internal Outfall 101. The monitoring frequency will be once per week using a grab sample.

The daily maximum and monthly average mass limits for Total Antimony, Total Arsenic, and Total Zinc have been established in the draft permit based on the effluent guidelines at 40 CFR 421.133, Subpart M. The effluent guidelines under which the permittee's process wastewater is regulated does not include metal allocations for first-flush stormwater runoff and landfill leachate. Therefore, first-flush stormwater runoff and landfill leachate has been included as a part of the process wastewater stream and receives allocations for the referenced metals as specified in Appendix A. The monitoring frequency will be once per week using a 24-hour Composite sample.

The daily maximum mass limit for Total Lead from the current LPDES permit will be retained in the draft permit since this pollutant has been designated as an impairment on the Final 2004 Integrated 303(d) List for Subsegment No. 070203. However, a water quality-based monthly average mass limit has been established in the draft permit as the result of a reasonable potential analysis using the monthly average technology-based limit calculated in Appendix A. The effluent guidelines under which the permittee's process wastewater is regulated does not include metal allocations for first-flush stormwater runoff and landfill leachate. Therefore, first-flush stormwater runoff and landfill leachate has been included as a part of the process wastewater stream and receives allocations for the referenced metal as specified in Appendix A. The monitoring frequency will be once per week using a 24-hour Composite sample.

E. Outfall 002

The permittee's request to remove this outfall has been granted. Due to the regrading of drainage areas and berms built to redirect the majority of the stormwater to Outfall 001, this outfall no

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longer receives stormwater flow from active areas associated with industrial activity. According to the permittee's DMRs, there has been "No Discharge" at this outfall since September 2002. Therefore, this outfall has been removed from the draft permit.

F. Outfall 003

Based on a review of the sample data reported on the permittee's DMRs for the monitoring period of January 2001 through December 2005, this Office has decided to establish daily maximum limits in lieu of reporting requirements for Total Antimony, Total Arsenic, Total Lead, and Total Zinc. The limits established in the draft permit for the referenced metals are the more stringent of the limits derived from the Development Document for Effluent Limitation Guidelines, New Source Performance Standards and Pretreatment Standards for the Inorganic Chemicals Manufacturing Point Source Category (ICCD), EPA 440/1-82/007 and state established empirical stormwater limits. The monitoring frequency will be once per month using a grab sample.

G. The facility discharges to a Water Quality Act 303(d) stream. Therefore, a reopener clause has been added to Part II of the permit in the event that the permit requires reassessment regarding 303(d) status resulting in incorporation of the results of any Total Maximum Daily Load (TMDL) allocation for the receiving water body.

H. Updated Part II conditions for stormwater discharges associated with industrial activities have been established in the draft permit.

X. **Permit Limit Rationale:**

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(l)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

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B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 001 - Non-contact cooling water, VSA O₂ plant overflow (non-contact cooling water), post first-flush stormwater runoff, and previously treated effluent from Internal Outfall 101

Utility wastewaters combined with post first-flush stormwater runoff being discharged to a discrete outfall receive BPJ limitations consistent with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA). Reporting requirements for Total Antimony, Total Arsenic, Total Lead, and Total Zinc have been established for data gathering purposes. Reporting requirements for Phosphorus and Nitrate/Nitrite have been established to gather data for TMDL development. Reporting requirements for Total Cadmium, Sulfates, and TDS have been established for the first three years after the effective date of the permit. Thereafter, water quality-based concentration limits will apply as the result of a reasonable potential analysis.

Flow (MGD) - Report, daily maximum and monthly average
TOC - 50 mg/L, daily maximum
Oil and Grease - 15 mg/L, daily maximum
Total Antimony - Report (lbs/day), daily maximum
Total Arsenic - Report (lbs/day), daily maximum
Total Lead - Report (lbs/day), daily maximum
Total Zinc - Report (lbs/day), daily maximum
Total Cadmium - Report (lbs/day), daily maximum and monthly average
Sulfates - Report (mg/L), daily maximum and monthly average
TDS - Report (mg/L), daily maximum and monthly average
Phosphorus - (mg/L), daily maximum and monthly average
Nitrate/Nitrite - (mg/L), daily maximum and monthly average
pH - 6.0 - 10.0 Standard Units, subject to the excursion provisions for continuously monitored pH

Site-Specific Considerations

In accordance with LAC 33:IX.1109.D.1, this Office has granted the permittee three years after the effective date of the permit to achieve compliance with the water quality-based limits for Total Cadmium, Sulfates, and TDS. Thereafter, the water quality-based limits in Appendix B shall apply.

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2. Internal Outfall 101 - Treated combined process wastewaters, sanitary wastewater, leachate from an closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2

Flow (MGD) - Report, daily maximum and monthly average

The permittee is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Nonferrous Metals Manufacturing	40 CFR 421.132 BPT and 421.133 BAT,
Point Source Category	Subpart M
(Secondary lead Subcategory)	

40 CFR 421	Production (million lbs/day)
M(a) - Battery Cracking	0.726
M(b) - Reverberatory Furnance Wet Air Pollution Control	Not Applicable
M(c) - Kettle Wet Air Pollution Control	Not Applicable
M(d) - Lead Paste Desulfurization (*1)	0.438
M(e) - Casting Contact Cooling	0.516
M(f) - Truck Wash	0.726
M(g) - Facility Washdown (*1)	0.726
M(h) - Battery Case Classification (*1)	0.726
M(i) - Employee Handwash	0.726
M(j) - Employee Respirator Wash	0.726
M(k) - Laundering of Uniforms	0.726

(*1) Subparts M(d), M(g), and M(h) are applicable, but no metal allocations are provided for the referenced subpart sections in the guidelines.

Calculations, results, and documentation for the technology-based mass limits for TSS, Oil and Grease, Total Antimony, Total Arsenic, Total Lead, and Total Zinc are found in Appendix A. See below for site-specific considerations.

Site-Specific Considerations

Allocation for Metals

The effluent guidelines under which the permittee's process wastewater is regulated does not include metal allocations for first-flush stormwater runoff and landfill leachate. Therefore, first-flush stormwater runoff and landfill leachate has been included as a part of the process wastewater stream and receives allocations for Total Antimony, Total Arsenic, Total Lead, and Total Zinc using the more stringent of the limits derived from the ICDD and the state established empirical stormwater limits. Based on previous records, allocations for both discharges have been included in the calculation of the daily maximum and monthly average mass limits for the referenced metals. However, in the current LPDES permit, only allocations for first-flush stormwater runoff were included. [NOTE: The applications used to develop the current LPDES permit and previous LWDPS permit did not include a wastestream for landfill leachate.] The table below illustrates how these allocations were derived. See Appendix A.

Table 1. Comparison of ICDD and State Empirical Limits

Metal	ICDD Monthly Average (mg/L)	State Empirical Monthly Average (mg/L) (*1)	Monthly Average Allocation (mg/L)	ICDD Daily Maximum (mg/L)	State Empirical Daily Maximum (mg/L)	Daily Maximum Allocation (mg/L)
Sb	0.398	0.411	0.398	0.549	0.600	0.549
As	0.099	0.069	0.069	0.137	0.100	0.100
Pb	0.199	0.103	0.103	0.275	0.150	0.150
Zn	0.497	0.685	0.497	0.686	1.000	0.686

(*1) State Empirical monthly average values are calculated as two-thirds (2/3) of the state empirical daily maximum values.

The methodology used in the previous permits for calculating the 30-Day Maximum flow rate for first-flush stormwater runoff at Outfall 001 will be continued in this draft permit since Internal Outfall 101 is a proposed outfall. The estimated 30-Day Maximum flow for first-flush stormwater runoff is 17.6% of the 30-Day Maximum flow rate of 0.335 MGD or 0.059 MGD. This flow value was derived from the following calculations:

First-Flush LTA flow = Ratio (100) = Percentage of Outfall 001 flow
Outfall 001 LTA flow containing First-Flush Stormwater

0.047238 MGD = 0.176(100) = 17.6%
0.268513 MGD

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(Outfall 001 30-Day Maximum flow)(0.176) = First-Flush Stormwater 30-Day
Maximum flow

(0.335 MGD)(0.176) = 0.059 MGD

Therefore, the allocations listed in Table 1 were converted into daily maximum and monthly average mass limits using the estimated 30-Day Maximum flow rate of 0.059 MGD (first-flush stormwater runoff) and LTA flow rate of 0.0025 MGD (landfill leachate). The 30-Day Maximum flow for first-flush stormwater runoff was also used in the technology spreadsheet to compute the TSS and Oil and Grease mass limits. See Appendix A.

TSS Limits

The daily maximum and monthly average mass limits for TSS are based on the BPT effluent guidelines under 40 CFR 421.132, Subpart M. The effluent guidelines under which the permittee's process wastewater is regulated does not include TSS allocations for first-flush stormwater runoff and landfill leachate. Therefore, first-flush stormwater runoff and landfill leachate has been included as part of the process wastewater stream and receives allocations by BPJ for TSS using a daily maximum and monthly average concentration of 30 mg/L and 15 mg/L, respectively. See Appendix A.

Oil and Grease Limits

Mass limits for Oil and Grease using the standard daily maximum and monthly average concentration limits of 15 mg/L and 10 mg/L, respectively, have been established in the draft permit. The proposed mass limits have been incorporated by BPJ based on the permittee's total process wastewater flow at Internal Outfall 101. See Appendix A.

Sanitary Wastewaters

Sanitary wastewater that is included as a part of the process wastewater stream did not receive BPJ allocations for BOD₅ and TSS loadings to the process wastewaters in Appendix A.

3. Outfalls 003 - Non-process area stormwater runoff

Non-process area stormwater runoff discharged through a discrete outfall not associated with process wastewater shall receive the following BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA). Additionally, based on a review of the sample data reported on the permittee's DMRs for the monitoring period of January 2001 through December 2005, this Office has established daily maximum concentration limits for Total Antimony, Total Arsenic, Total Lead, and Total Zinc. The limits established in the draft permit for the referenced metals were the more stringent of the limits derived from the ICCD and state established empirical stormwater limits. See Table 1 above.

Flow (MGD)- Report, monthly average and daily maximum
TOC - 50 mg/L, daily maximum
Oil and Grease - 15 mg/L, daily maximum
Total Antimony - 0.549 mg/L, daily maximum
Total Arsenic - 0.100 mg/L, daily maximum
Total Lead - 0.150 mg/L, daily maximum
Total Zinc - 0.686 mg/L, daily maximum
pH - 6.0 - 9.0 Standard Units

Storm Water Pollution Prevention Plan (SWP3) Requirement

In accordance with LAC 33:IX.2707.I.3 and 4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all stormwater discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference into the SWP3. Examples of these type of plans include, but are not limited to: Spill Prevention Control and Countermeasure Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including BMP controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined at LAC 33:IX.2511.B.14 [(40 CFR 122.26 (b) (14))].

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations and/or sample data from the 2005 permit application were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality-based effluent limits:

Total Lead (monthly average only)
Total Cadmium
Sulfates

TDS

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

TMDL Waterbody

Subsegment No. 070203 of the Mississippi River Basin is listed on the Final 2004 Integrated 303(d) List as impaired for nitrate/nitrite, organic enrichment/low Dissolved Oxygen (DO), cadmium, pathogen indicators, phosphorus, and lead. To date, no TMDL Assessments have been completed for this subsegment. The TMDL Assessments are scheduled to be completed by March 31, 2010. Until completion of TMDLs for the Mississippi River Basin, those suspected causes for impairment which are not directly attributed to the nonferrous metals manufacturing point source category have been eliminated in the formulation of effluent limits and other requirements of this permit. Additionally, suspected causes of impairment which could be attributed to pollutants which were not determined to be discharged at a level which would cause, have the reasonable potential to cause or contribute to an excursion above any present state water quality standard were also eliminated. Based on an evaluation of the effluent discharges, it was determined that pathogen indicators (see Section IX.C) are not being discharged at a level which would cause or have a reasonable potential to cause or contribute to an effluent violation above any present state water quality standard. However, the permittee does have the potential to contribute to nutrients (nitrate/nitrite and phosphorus), organic enrichment/low DO, cadmium, and lead. Therefore, effluent limits for TOC, Total Cadmium, and Total Lead have been established in the draft permit to ensure that the integrity of the waterbody is maintained. Reporting requirements have been established in the draft permit for phosphorus and nitrate/nitrite to gather data for TMDL development.

A reopener clause is being placed in Part II of the permit to allow for more stringent or additional limitations or requirements to be placed in the permit, if needed, as a result of the TMDL.

D. Biomonitoring Requirements

The provisions of this section apply to Outfall 001:

On or about September 26, 1989, the permittee was issued ORDER FOR INFORMATION Docket No. VI-89-1782 which required the permittee to perform toxicity testing on the effluent from Outfall 001. On or about April 25, 1990, ORDER FOR INFORMATION Docket No. VI-89-1782 was superceded and closed through the issuance of ORDER FOR INFORMATION Docket No. VI-90-1136

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which required the permittee to conduct a Toxicity Reduction Evaluation (TRE). Data on file indicated that lethality was exhibited to the species during the TRE process with lead as the suspected toxicant. Additional information indicated lead concentrations exceeded EPA criteria for freshwater aquatic toxicity and due to the absence of a promulgated water quality standard for lead by the state, a Whole Effluent Toxicity (WET) limit was incorporated in the permit. Therefore, the LPDES permit is being reissued at this time, under the authority of Section 301(b)(1)(C) of the Clean Water Act, to incorporate effluent limits for whole effluent toxicity. See Appendix D for Biomonitoring Recommendation.

Whole effluent toxicity testing conducted by the permittee has shown potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body, at the appropriate instream critical dilution. Pursuant to LAC 33:IX.2707.D.1.e/40 CFR 122.44(d)(1)(v), this Office has determined that the discharge from this facility does have the reasonable potential to cause, or contribute to an instream excursion above the narrative criterion within the applicable State water quality standards, in violation of Section 101(a)(3) of the Clean Water Act. Furthermore, this Office has determined that chemical specific limitations alone are not sufficient to maintain the applicable numeric and narrative State water quality standards. The State has established a narrative water quality criteria which, in part, states that

"No substances shall be present in the waters of the state or the sediments underlying said waters in quantities that alone or in combination will be toxic to human, plant, or animal life or significantly increase health risks due to exposure to the substances or consumption of contaminated fish or other aquatic life." (Louisiana Surface Water Quality Standards, LAC Title 33, Part IX, Chapter 11, Section 1113.B.5.) The draft permit establishes the following testing and reporting requirements:

TOXICITY TESTS

FREQUENCY

Chronic static renewal 7-day
survival and reproduction test
using Ceriodaphnia dubia
[Method 1002.0]

1/quarter

Chronic static renewal 7-day
larval survival and growth test
using fathead minnow (Pimephales
promelas) [Method 1000.0]

1/quarter

The monitoring frequency shall be once/quarter per species for the term of the permit.

PRELIMINARY DRAFT

The draft permit additionally requires the reporting of the coefficient of variation (larger of the low-flow and control dilutions) for each test species.

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001, March 1989." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to provide data representative of the facility's discharge in accordance with regulations listed at LAC 33:IX.2715/40 CFR 122.48 and to assure compliance with permit limitations following regulations listed at LAC 33:IX.2707.I.1/40 CFR 122.44(i)(1).

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity test. These additional effluent concentrations shall be 18%, 24%, 32%, 43%, and 57%. The low-flow effluent concentration (critical dilution/WET limit) is defined as 43% effluent.

E. MONITORING FREQUENCIES

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.I./40 CFR 122.44(I)]. All monitoring frequencies are based upon best professional judgement and/or are consistent with frequencies established in the current LPDES permit.

1. Outfall 001 - Non-contact cooling water, VSA O₂ plant overflow (non-contact cooling water), post first-flush stormwater runoff, and previously treated effluent from Internal Outfall 101

Flow and pH shall be monitored continuously using a recorder. TOC and Oil and Grease shall be monitored once per month using a grab sample. Phosphorus, Nitrate/Nitrite, Sulfates and TDS shall be monitored once per

quarter using a grab sample. Total Cadmium shall be monitored once per month using a 24-hour Composite sample. The remaining pollutants are to be monitored once per month using a 24-hour Composite sample. These monitoring frequencies are established by BPJ and the 2001 LPDES permit.

Parameters:

Flow
TOC
Oil and Grease
Total Antimony
Total Arsenic
Total Lead
Total Zinc
Total Cadmium
Sulfates
TDS
Phosphorus
Nitrate/Nitrite
pH

2. Internal Outfall 101 - Treated combined process wastewaters, sanitary wastewater, leachate from an closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2

Flow shall be monitored continuously using a recorder. Oil and Grease shall be monitored once per month using a grab sample. The remaining pollutants are to be monitored once per week using a 24-hour Composite sample. These monitoring frequencies are established by BPJ based on the 2001 LPDES permit.

Flow
Oil and Grease
TSS
Total Antimony
Total Arsenic
Total Lead
Total Zinc

3. Outfalls 003 - Non-process area stormwater runoff

All parameters - 1/month, using a grab sample when discharging

PRELIMINARY DRAFT

XI. Compliance History/DMR Review:

- A. COMPLIANCE ORDER & NOTICE OF POTENTIAL PENALTY WE-CN-05-0088 was issued to Exide Technologies, Inc. on November 28, 2005, for permit and effluent violations.
- B. A DMR review of all of the monitoring reports for the period of January 2003 through January 2006 revealed the following effluent violations:

<u>Date</u>	<u>Parameter</u>	<u>Outfall</u>	<u>Reported Value</u>	<u>Permit Limits</u>
12/05	WET limit	TX1S	50% (min)	21.1%
11/05	pH >60 min.	001	0 occur/month (max)	1 occur/month
11/05	T. Arsenic	001	2.56 lbs/day (max)	0.86 lbs/day
11/05	WET limit	TX1S	50% (min)	0%
08/05	TSS	001	45.1 lbs/day (max)	83.03 lbs/day
08/05	T. Lead	001	41.33 lbs/day (max)	0.25 lbs/day
07/05	pH >60 min.	001	0 occur/month (max)	2 occur/month
06/05	pH >60 min.	001	0 occur/month (max)	1 occur/month
06/05	T. Lead	001	0.343 lbs/day (max)	0.25 lbs/day
06/05	TSS	001	45.1 lbs/day (max)	71.46 lbs/day
05/05	T. Lead	001	0.518 lbs/day (max)	0.25 lbs/day
05/05	pH >60 min.	001	0 occur/month (max)	1 occur/month
04/05	pH >60 min.	001	0 occur/month (max)	4 occur/month
04/05	pH, Monthly Total	001	446 minutes (max)	1,542 minutes
04/05	T. Lead	001	0.35 lbs/day (max)	0.25 lbs/day
03/05	T. Lead	001	0.57 lbs/day (max)	0.25 lbs/day
03/05	WET limit	TX1S	50% (min)	37.5%
03/05	T. Arsenic	001	2.29 lbs/day (max)	0.86 lbs/day

- C. The most recent inspection was performed on March 21, 2006. No areas of concern were noted in the report.

XII. Endangered Species:

The receiving waterbody, Subsegment No. 070203 of the Mississippi River Basin, is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 21, 2005, from Watson (FWS) to Gautreaux (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XIV. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in the application.

XVI. Variances:

No requests for variances have been received by this Office.

XVII. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspapers of general circulation

Office of Environmental Services Public Notice Mailing List

Appendix A

04/17/2006 Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter

(*1)

TABLE 1

Permittee: Exide Technologies, Baton Rouge Smelter

Permit Number: LA0004464, A11396

(*3)

Fraction of OCPSF Conc. or BPJ []

Appendix Appendix A-1

Fract =0, []=1

0 BOD,avg BOD,max TSS,avg TSS,max

[] Flow Basis 1=proc, 0=all

0

Miscellaneous WW

0.5 0.5 0.5 0.5

Concentration flow, (MGD)

Misc. WW, mg/L

5 10 10 20

GL vs Old, 0=n, 1=y, 2=GL+Old

1

Utility WW

0.25 0.25 0.25 0.25

Outfall number

Out. 101

Utility WW, mg/L

5 10 10 20

Deepwell fract., 40 CFR 122.50

Sanitary, mg/L

30 45 30 45

Conversion Factors:

(*2)

(*4)

Conv mg/L-->lbs/da 8.34

PROCESS FLOW CALCULATION:

MGD

gpm

Metal+CN Flows:

MGD

gpm

Conv ug/L-->mg/L: 0.0001

Conv gpm-->MGD: 0.00144

Furnace Closed Loop Cooling

0.001

Total Chromium

(*8)

Furnace Cooling Overflow

0.0426

Total Copper

OCPSF Alternate Flows:

MGD

Metal Casting

0.0385

Total Lead

Conventional:

Sanitary Laundry

0.0098

Total Nickel

Organic Toxics:

Slag Stabilization

0.0005

Total Zinc

Process Waste Water

Water Truck/Wet Sweep

0.002

Total Cyanide

Process Stormwater

Equipment Wash

0.0036

(*5)

(*9)

First Flush Stormwater

0.059

OCPSF Guideline

Prod.

Prod.

Page and Table Numbering

Plant Washdown

0.047

Subpart:

1000 lbs

Fraction

1=y, 0=n

Engitec Discharge Overloading

0.001

per day

of Total

1st Input Page

1

Engitec Condensate Overflow

0.0018

B, Rayon Fibers

2nd Input Page

0

Landfill Leachate

0.0025

C, Other Fibers

OCPSF

0

D,Thermoplastic Resins

SS Metals

0

E,Thermosetting Resins

Inorganic

1

F, Commodity Organics

Fertilizer

0

TOTAL PROCESS FLOW:

0.2093

G, Bulk Organics

Pesticides

0

BOD5/TSS BPJ ALLOCATION FLOWS:

MGD

gpm

H. Specialty Organics

COD/TOC/O&G Tbl

1

Total:

BOD/TSS Tbl

1

Table Designation Sequence

SANITARY WW:

(*6)

Pesticides &OCPSF

0

MISCELLANEOUS FLOWS:

MGD

gpm

COD & TOC Ratios: Average Maximum

PestMetal 1=y,0=n

0

COD/BOD5 ratio

TOC/BOD5 ratio

Flow (*10)

COD,TOC, O&G []: Average Maximum

MGD COD and TOC limits, precalc

COD, mg/L

--- COD,Avg (lbs/day)

0

TOC, mg/L

--- COD,Max (lbs/day)

0

TOTAL MISCELLANEOUS FLOWS:

O&G, mg/L

10

15

0.2093

TOC,Avg (lbs/day)

0

TOC,Max (lbs/day)

0

UTILITY WASTEWATER:

MGD

gpm

(*7)

INORGANIC GUIDELINES:

New Source 1=y 0=n

0 Prod.

OCPSF BOD5

O Fraction=0, []=1

0 1000 lbs

Flow

Flow

OCPSF Fraction

40 CFR 415

per day

MGD

gpm

Avg

Max

40 CFR 415.63 Mercury

1

1

40 CFR 415.63 Diaphragm

1

1

1

1

TOTAL UTILITY WW FLOWS:

1

1

TOTAL FLOW:

0.2093

OCPSF+Inorganic

0.2093

Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter

Out. 101

Conventional pollutant loading calculations, BOD5 and TSS

TABLE 2

Calculation of BOD5, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D, Thermoplastic Resins							---	8.34	---	---	---	---
E, Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted()	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS				Conv.	BOD5	BOD5	TSS	TSS
40 CFR 421 Subpt. M	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ SW Allowance:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
First Flush Stormwater	---	---	15	30			0.059	8.34	---	---	7.3809	14.7618
Landfill Leachate	---	---	15	30			0.0025	8.34	---	---	0.31275	0.6255
							---	8.34	---	---	---	---

[*1] TSS and subsequent toxic concentration allocations based on the previously effective permit (4/1/2001). These same allocations were applied to the landfill leachate on a BPJ basis.

BPJ Source Total:							0.0615		---	---	7.69365	15.3873
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to		Conv.	BOD5	BOD5	TSS	TSS
	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	lbs/1000	lbs/1000	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
							---	8.34	---	---	---	---
Nonferrous Metals Mfg.	BOD5	BOD5	TSS	TSS	Prod.	Flow to			BOD5	BOD5	TSS	TSS
40 CFR 421	Avg	Max	Avg	Max	MM lbs	Tmt. Plt.	Flow		Avg	Max	Avg	Max
Subpart M	lbs/1000	lbs/1000	lbs/MM	lbs/MM	per day	Fraction	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Secondary Lead Smelting												
(a) Battery Cracking			13.13	27.6	0.726	---			---	---	9.53238	20.0376
(e) Casting Cooling			4.31	9.061	0.516	---			---	---	2.22396	4.675476
(f) Truck Wash			0.41	0.861	0.726	---			---	---	0.29766	0.625086
(i) Employee Handwash			0.527	1.107	0.726	---			---	---	0.382602	0.803682
(j) Employee Resp. Wash			0.858	1.804	0.726	---			---	---	0.622908	1.309704
(k) Laundering of Unif.			2.496	5.248	0.726	---			---	---	1.812096	3.810048
Other Guideline Total (lbs/day)							---		---	---	14.87161	31.2616
BOD5/TSS Grand Total (lbs/day)							0.0615		---	---	22.56526	46.6489

Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter
Out. 101

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	COD	COD	TOC	TOC	Prod.	Flow to		Conv.	COD	COD	TOC	TOC
Guideline Subpart:	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.		Factor	Avg	Max	Avg	Max
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
Guideline Total									---	---	---	---
BPJ Source(s) or	COD	COD	TOC	TOC		COD	TOC	Conv.	COD	COD	TOC	TOC
Flow Based Guidelines	Avg	Max	Avg	Max		Flow	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
BPJ Source/GL Total									---	---	---	---
COD or TOC/BOD Ratio, Source:	COD/BOD5 Ratio	COD/BOD5 Ratio	TOC/BOD5 Ratio	TOC/BOD5 Ratio	BOD5 limit	BOD5 limit			COD Avg	COD Max	TOC Avg	TOC Max
	Avg	Max	Avg	Max	Avg	Max			lbs/day	lbs/day	lbs/day	lbs/day
	---	---	---	---	---	---			---	---	---	---
									---	---	---	---
Ratio Total									---	---	---	---
COD/TOC limits, precalc.									---	---	---	---
COD/TOC Total (lbs/day)									---	---	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max			Prod. 1000 lbs	Flow to Tmt. Plt.		Conv. Factor	O&G Avg	O&G Max		
	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day	Fraction			lbs/day	lbs/day	lbs/day	lbs/day
			---	---		---			---	---	---	---
			---	---		---			---	---	---	---
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max	Avg	Max		O&G Flow	O&G Flow	Conv. Factor	O&G Avg	O&G Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L		(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
BPJ O&G Allocation	10	15	---	---		0.2093	---	8.34	17.45562	26.18343	---	---
	---	---	---	---		---	---	8.34	---	---	---	---
O&G Total (lbs/day)									17.45562	26.18343	---	---

Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter

Out. 101

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 4

40 CFR 414 OCPSF, 40 CFR 415, and 40 CFR 455 as applicable

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Nonferrous Metals Mfg.	Chromium	Chromium	Copper	Copper	Prod.	Flow to	Chromium	Copper	Chromium	Chromium	Copper	Copper
40 CFR 421	Avg	Max	Avg	Max	1000 lbs Tmt.	Plt.	Flow	Flow	Avg	Max	Avg	Max
Subpart M	mg/L	mg/L	mg/L	mg/L	per day	Fraction	(MGD)	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
	Avg	Max	Avg	Max								
	lbs/1000	lbs/1000	lbs/1000	lbs/1000								
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
							---	---	---	---	---	---
Total							---	---	---	---	---	---
Nonferrous Metals Mfg.	Lead	Lead	Nickel	Nickel	Prod.	Flow to	Lead	Nickel	Lead	Lead	Nickel	Nickel
40 CFR 421	Avg	Max	Avg	Max	MM lbs Tmt.	Plt.	Flow	Flow	Avg	Max	Avg	Max
Subpart M	mg/L	mg/L	mg/L	mg/L	per day	Fraction	(MGD)	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day
First Flush Stormwater	0.103	0.15					0.059	---	0.050682	0.073809	---	---
Landfill Leachate	0.103	0.15					0.0025	---	0.002148	0.003128	---	---
	Avg	Max	Avg	Max								
	lbs/MM	lbs/MM	lbs/MM	lbs/MM								
(a) Battery Cracking	0.087	0.189			0.726	---			0.063162	0.137214	---	---
(e) Casting Cooling	0.003	0.006			0.516	---			0.001548	0.003096	---	---
(f) Truck Wash	0.003	0.006			0.726	---			0.002178	0.004356	---	---
(i) Employee Handwash	0.004	0.008			0.726	---			0.002904	0.005808	---	---
(j) Employee Resp. Wash	0.006	0.012			0.726	---			0.004356	0.008712	---	---
(k) Laundering of Unif.	0.017	0.036			0.726	---			0.012342	0.026136	---	---
Total							0.0615	---	0.13932	0.262259	---	---
Nonferrous Metals Mfg.	Zinc	Zinc	Cyanide	Cyanide	Prod.	Flow to	Zinc	Cyanide	Zinc	Zinc	Cyanide	Cyanide
40 CFR 421	Avg	Max	Avg	Max	MM lbs Tmt.	Plt.	Flow	Flow	Avg	Max	Avg	Max
Subpart M	mg/L	mg/L	mg/L	mg/L	per day	Fraction	(MGD)	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day
First Flush Stormwater	0.497	0.686					0.059	---	0.244554	0.337553	---	---
Landfill Leachate	0.497	0.686					0.0025	---	0.010362	0.014303	---	---
	Avg	Max	Avg	Max								
	lbs/MM	lbs/MM	lbs/1000	lbs/1000								
(a) Battery Cracking	0.283	0.687			0.726	---			0.205458	0.498762	---	---
(e) Casting Cooling	0.009	0.022			0.516	---			0.004644	0.011352	---	---
(f) Truck Wash	0.009	0.021			0.726	---			0.006534	0.015246	---	---
(i) Employee Handwash	0.011	0.028			0.726	---			0.007986	0.020328	---	---
(j) Employee Resp. Wash	0.018	0.045			0.726	---			0.013068	0.03267	---	---
(k) Laundering of Unif.	0.054	0.131			0.726	---			0.039204	0.095106	---	---
Total							0.0615	---	0.53181	1.02532	---	---

Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter

Out. 101

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 4

40 CFR 415 and 40 CFR 455 as applicable

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Nonferrous Metals Mfg.	TRC	TRC	Mercury	Mercury	Prod. Flow to		TRC	Mercury	TRC	TRC	Mercury	Mercury
40 CFR 421	Avg	Max	Avg	Max	1000 lbs Tmt. Plt.		Flow	Flow	Avg	Max	Avg	Max
Subpart M	lbs/1000	lbs/1000	lbs/1000	lbs/1000	per day Fraction		(MGD)	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day
Other Sources, BPJ	Avg	Max	Avg	Max					Avg	Max	Avg	Max
(Flow Based)	mg/L	mg/L	mg/L	mg/L					lbs/day	lbs/day	lbs/day	lbs/day
Total												
Nonferrous Metals Mfg.	Arsenic	Arsenic	Antimony	Antimony	Prod. Flow to		Arsenic	Antimony	Arsenic	Arsenic	Antimony	Antimony
40 CFR 421	Avg	Max	Avg	Max	MM lbs Tmt. Plt.		Flow	Flow	Avg	Max	Avg	Max
Subpart M	lbs/MM	lbs/MM	lbs/MM	lbs/MM	per day Fraction		(MGD)	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day
(a) Battery Cracking	0.384	0.936	0.579	1.299	0.726	---			0.278784	0.679536	0.420354	0.943074
(e) Casting Cooling	0.013	0.031	0.019	0.042	0.516	---			0.006708	0.015996	0.009804	0.021672
(f) Truck Wash	0.012	0.029	0.018	0.041	0.726	---			0.008712	0.021054	0.013068	0.029766
(i) Employee Handwash	0.015	0.038	0.023	0.052	0.726	---			0.01089	0.027588	0.016698	0.037752
(j) Employee Resp. Wash	0.025	0.061	0.038	0.085	0.726	---			0.01815	0.044286	0.027588	0.06171
(k) Laundering of Unif.	0.073	0.178	0.11	0.247	0.726	---			0.052998	0.129228	0.07986	0.179322
Other Sources, BPJ	Avg	Max	Avg	Max					Avg	Max	Avg	Max
(Flow Based)	mg/L	mg/L	mg/L	mg/L					lbs/day	lbs/day	lbs/day	lbs/day
First Flush Stormwater	0.069	0.1	0.398	0.549			0.059	0.059	0.033952	0.049206	0.19584	0.270141
Landfill Leachate	0.069	0.1	0.398	0.549			0.0025	0.0025	0.001439	0.002085	0.008298	0.011447
							---	---	---	---	---	---
Total							0.0615	0.0615	0.411633	0.968979	0.77151	1.554884

Calculation of Technology Based Limits for Exide Technologies, Baton Rouge Smelter
Out. 101

TABLE 5

Calculation Summary of Conventional and Non-Conventional Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)		
Parameter	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old	Tech	Old	Anti-Back	Out. 101	Out. 101	Out. 101	Out. 101
	Avg.	Max	Flow	Avg	Max	Avg				Max0=no scr.	Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day	1=Old	vsGL	lbs/day	lbs/day		mg/L	mg/L
								2=Old+GL						
CONVENTIONAL														
BOD5				---	---					---	---	---	---	---
TSS				22.56526	46.6489					---	23	47	---	---
Oil and Grease				17.45562	26.18343					---	17	26	---	---
NON-CONVENTIONAL														
COD				---	---					---	---	---	---	---
TOC				---	---					---	---	---	---	---
TRC				---	---					---	---	---	---	---
Ammonia Nitrogen				---	---					---	---	---	---	---
Organic Nitrogen				---	---					---	---	---	---	---
Nitrate Nitrogen				---	---					---	---	---	---	---

Calculation Summary of Metal and Cyanide Toxic Limits

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech Old	Tech Old	Anti-Back	Out. 101	Out. 101	Out. 101	Out. 101
	Avg.	Max	Flow	Avg	Max	Avg	Max	0=no scr.	Avg	Max	Avg	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day	1=Old vs GL	lbs/day	lbs/day	mg/L	mg/L
METALS AND CYANIDE	2=Old+GL											
Total Chromium				---	---			---	---	---	---	---
Total Copper				---	---			---	---	---	---	---
Total Lead				0.13932	0.262259			---	0.14	0.26	---	---
Total Nickel				---	---			---	---	---	---	---
Total Zinc				0.53181	1.02532			---	0.53	1.03	---	---
Total Mercury				---	---			---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---
Arsenic				0.411633	0.968979			---	0.41	0.97	---	---
Antimony				0.77151	1.554884			---	0.77	1.55	---	---

APPENDIX A-2 LA0004464, AI No. 1396

Documentation and Explanation of Technology Calculations
and Associated Lotus Spreadsheet

This is a technology spreadsheet covering the following guideline: 40 CFR 421, Subpart M, Nonferrous Metals Manufacturing Point Source Category, Secondary Lead Subcategory. Subpart M has several sections; Subpart M(a) - Battery Cracking, Subpart M(b) - Reveratory Furnace Wet Air Pollution Control, Subpart M(c) - Kettle Wet Air Pollution Control, Subpart M(d) - Lead Paste Desulfurization, Subpart M(e) - Casting Contact Cooling, Subpart M(f) - Truck Wash, Subpart M(g) - Facility Washdown, Subpart M(h) - Battery Case Classification, Subpart M(i) - Employee Handwash, Subpart M(j) - Employee Respirator Wash, and Subpart M(k) - Laundering of Uniforms. Subparts M(b) and M(c) are not applicable to this facility. Subparts M(d), M(g), and M(h) are applicable, but no allocation of parameters is given in these subpart sections in the guidelines. The sections that are not applicable or that do not have an allocation of parameters will not appear in the spreadsheet.

Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit", refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.1/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is the data input area for flow information associated with the above mentioned guidelines and the inorganic chemical guidelines, Sections (*2), (*3), (*4), (*5), (*6), (*7), (*8), (*10), and (*11). The Page and Table numbering sequence section is Section (*9) and the generalized input information is Section (*1).

(*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

1 Flow Basis 1=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.1, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract., 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

- (*2) Flow Calculations- Flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are

considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD₅ and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

- (*3) Fraction of OCPSF Conc. or BPJ []. Utility, Miscellaneous and other wastewaters contribute BOD₅ and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD₅ and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD₅ and TSS. Sanitary wastewaters shall receive BOD₅ and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD₅ and TSS fractions may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.
- (*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals through out a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.1, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.
- (*5) OCPSF Guideline Subpart- BOD₅ and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).

- (*6) COD & TOC Ratios/COD, TOC, O&G []- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD₅ limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

- (*7) Inorganic Effluent Guidelines (40 CFR 415)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. Q Fraction=0, []=1, indicates whether the BPJ BOD₅ allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the labeled columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.

- (*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD₅ and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.

- (*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.

- (*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.

- (*11) Inorganic Flow Sources- Although flow is not used in calculating mass limits under the inorganic effluent guidelines, these flows are sometimes used in allocating BPJ loadings or for informational purposes.

Table 2

Table 2 is a calculation table for the conventional pollutant loadings of BOD₅ and TSS utilizing guidelines and BPJ.

- (*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater, miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".
- (*2) Average BOD₅- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.
- (*3) Maximum BOD₅- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.
- (*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart.
- (*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water.
- (*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.
- (*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.
- (*10) BOD₅, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*2) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD₅ loading applicable to that subpart. BPJ Source

allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*2) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD₅ allocation provided that anti-backsliding does not apply. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD₅.

- (*11) BOD₅, Maximum, lbs/day- Similar to column (*10). See column (*10).
- (*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (*4) is multiplied by the production fraction in column (*7), the flow in column (*8), the conversion factor in column (*9) yielding a monthly average BOD₅ loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (*4) is multiplied by the production value in (*6), and the flow to treatment plant fraction in column (*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted[]." The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.
- (*13) TSS, Maximum, lbs/day- Similar to column (*12). See column (*12).

Table 3

Table 3 includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

- (*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.
- (*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 0.9 mg/L, average, from the

Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.

- (*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.
- (*4) Same as (*2).
- (*5) Same as (*3).
- (*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.
- (*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.
- (*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*2) and (*3) and is used in determining flow based loadings.
- (*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (*4) and (*5) and is used in determining flow based loadings.
- (*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*2) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*2) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.
- (*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (*3) times the flow specified in column (*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (*3) is multiplied times the daily production value specified in column (*6) and the flow to treatment plant fraction in column (*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.

(*12) Similar to column (*10). See description for (*10).

(*13) Similar to column (*11). See description for (*11).

Table 4

Table 4 is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (*2) (Daily Average) and (*3) (Daily Maximum) are multiplied times the flow in column (*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (*5) and (*6), respectively.

- (*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.
- (*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.
- (*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSF only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.
- (*4) Process flow in MGD- Similar to columns (*2) and (*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.
- (*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (*2), these values are calculated in other tables and summarized in this column.
- (*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (*5).
- (*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits (~10% or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter

of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.

- (*8) Maximum Tech Old in lbs/day- Similar to (*7).
- (*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (*10) and (*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Tech is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (*4) and (*5) are subsequently added to the values in columns (*7) and (*8) yielding technology-based effluent limitations in columns (*10) and (*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.
- (*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*5). When anti-backsliding screening is used, see discussion for column (*9).
- (*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (*6). When anti-backsliding screening is used, see discussion for column (*9).
- (*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*10). The formula is as follows:
$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$
- (*13) Maximum technology based effluent limit in mg/L- Similar to column (*11), a concentration limit can be calculated using the specified concentration flow from section (*1) in Table 1 and the mass limitation calculated under column (*11). The formula is as follows:
$$\frac{\text{effluent limit, lbs/day}}{\text{flow, MGD} * 8.34}$$

Appendix B

Developer: Bruce Fielding Time: 09:18 AM

Software: Lotus 4.0

LA0004464, AI1396

Revision date: 02/14/05

Water Quality Screen for Exide Technologies, Baton Rouge Smelter

Input variables:

Receiving Water Characteristics:

Receiving Water Name= Bayou Baton Rouge, Segment 070203

Critical flow (Qr) cfs= 0.7

Harm. mean/avg tidal cfs= 1.73

Drinking Water=1 HHNPCR=2

Marine, 1=y, 0=n

Rec. Water Hardness= 41.53

Rec. Water TSS= 12

Fisch/Specific=1,Stream=0

Diffuser Ratio=

Effluent Characteristics:

Permittee= Exide Technologies, Baton Rouge Smelter

Permit Number= LA0004464, AI1396

Facility flow (Qef),MGD= 0.335

Outfall Number = 001

Eff. data, 2=lbs/day 2

MQL, 2=lbs/day 1

Effluent Hardness= 310.8

Effluent TSS= N/A

WQBL ind. 0=y, 1=n

Acute/Chr. ratio 0=n, 1=y 0

Aquatic,acute only1=y,0=n

Page Numbering/Labeling

Appendix Appendix B-1

Page Numbers 1=y, 0=n 1

Input Page # 1=y, 0=n 1

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3

Pipe width, feet

ZID plume dist., feet

MZ plume dist., feet

HHnc plume dist., feet

HHc plume dist., feet

Fischer/site specific dilutions:

F/specific ZID Dilution = ---

F/specific MZ Dilution = ---

F/specific HHnc Dilution= ---

F/specific HHc Dilution= ---

Dilution:

ZID Fs = 0.1

MZ Fs = 1

Critical Qr (MGD)= 0.45241

Harm. Mean (MGD)= 1.118099

ZID Dilution = 0.88102

MZ Dilution = 0.425445

HHnc Dilution= 0.425445

HHc Dilution= 0.230542

ZID Upstream = 0.135048

MZ Upstream = 1.350478

MZhhnc Upstream= 1.350478

MZhhc Upstream= 3.337609

ZID Hardness= 278.7623

MZ Hardness= 156.0897

ZID TSS= ---

MZ TSS= ---

Multipliers:

WLAA --> LTAA 0.32

WLAC --> LTAC 0.53

LTA a,c-->WQBL avg 1.31

LTA a,c-->WQBL max 3.11

LTA h --> WQBL max 2.38

WQBL-limit/report 2.13

WLA Fraction 1

WQBL Fraction 1

Conversions:

ug/L-->lbs/day Qef0.002794

ug/L-->lbs/day Qeo 0

ug/L-->lbs/day Qr 0.005838

lbs/day-->ug/L Qeo357.9226

lbs/day-->ug/L Qef357.9226

diss-->tot 1=y0=n 1

Cu diss-->tot1=y0=n 1

cfs-->MGD 0.6463

Receiving Stream:

Default Hardness= 25

Default TSS= 10

99 Crit., 1=y, 0=n 1

Toxicity Dilution Series:

Biomonitoring dilution: 0.425445

Dilution Series Factor: 0.75

Percent Effluent

Dilution No. 1 56.726%

Dilution No. 2 42.5445%

Dilution No. 3 31.9084%

Dilution No. 4 23.9313%

Dilution No. 5 17.9485%

Partition Coefficients; Dissolved-->Total

METALS

FW

Total Arsenic 1.938902

Total Cadmium 3.895786

Chromium III 4.998361

Chromium VI 1

Total Copper 2.98436

Total Lead 5.602505

Total Mercury 3.047918

Total Nickel 2.426409

Total Zinc 3.634295

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS ACUTE CHRONIC

Arsenic 339.8 150

Cadmium 105.0277 1.521716

Chromium III 1270.609 256.3337

Chromium VI 15.712 10.582

Copper 48.40982 17.97121

Lead 276.7263 5.154035

Mercury 1.734 0.012

Nickel 3369.374 229.1003

Zinc 272.8052 152.4034

Site Specific Multiplier Values:

CV = ---

N = ---

WLAA --> LTAA ---

WLAC --> LTAC ---

LTA a,c-->WQBL avg ---

LTA a,c-->WQBL max ---

LTA h --> WQBL max ---

Exide Technologies, Baton Rouge Smelter
LA0004464, A11396

(+1)	(+2)	(+3)	(+4)	(+5)	(+6)	(+7)	(+8)	(+9)	(+10)	(+11)
Toxic Parameters	CuEffluent Instream Conc. ug/L	Effluent /Tech (Avg) lbs/day	Effluent /Tech (Max) lbs/day	MQEffluent 1=No 95% 0=95 % ug/L	95th % Non-Tech lbs/day	estimate	Numerical Criteria Acute FW ug/L	Chronic FW ug/L	HHNDW ug/L	HH Carcinogen Indicator "C"
NONCONVENTIONAL										
Total Phenols (4AAP)		0.025		5	0	0.05325	700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenoc- acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen- oxy) propionic acid (2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic	0.411633	0.968979		10	1		658.8388	290.8353		
Total Cadmium	0.014	---		1	0	0.02982	409.1655	5.928278		
Chromium III	---	---		10			6350.96	1281.248		
Chromium VI	---	---		10			15.712	10.582		
Total Copper	---	---		10			144.4723	53.63257		
Total Lead	0.13932	0.262259		5	1		1550.361	28.87551		
Total Mercury	---	---		0.2			5.28509	0.036575		
Total Nickel	---	---		40			8175.478	555.891		
Total Zinc	0.53181	1.02532		20	1		991.4545	553.879		
Total Cyanide	---	---		20			45.9	5.2	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-005					7.2E-007	C
VOLATILE COMPOUNDS										
Benzene	---	---		10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride	---	---		10			2730	1365	1.2	C
Chloroform	---	---		10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane	---	---		10			11800	5900	6.8	C
1,1-Dichloroethylene	---	---		10			1160	580	0.58	C
1,3-Dichloropropylene	---	---		10			606	303	162.79	
Ethylbenzene	---	---		10			3200	1600	8100	
Methyl Chloride	---	---		50			55000	27500		
Methylene Chloride	---	---		20			19300	9650	87	C
1,1,2,2-Tetrachloro- ethane				10			932	466	1.8	C

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(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	794.5334	822.6672	117.5239	254.2507	436.0136	117.5239	117.5239	117.5239	279.7068	0.32835	0.781473	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	434.7233	451.2917	---	139.1115	239.1846	---	139.1115	182.236	432.6366	0.509149	1.208743	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenoc-												
acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-												
oxy) propionic acid												
(2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	747.8135	683.6018	---	239.3003	362.309	---	239.3003	313.4834	744.224	0.875841	2.079288	no
Total Cadmium	464.4224	13.93428	---	148.6152	7.385171	---	7.385171	9.674574	22.96788	0.02703	0.06417	yes
Chromium III	7208.643	3011.545	---	2306.766	1596.119	---	1596.119	2090.916	4963.929	5.841809	13.86872	no
Chromium VI	17.83387	24.87275	---	5.706839	13.18256	---	5.706839	7.475958	17.74827	0.020887	0.049587	no
Total Copper	163.983	126.0621	---	52.47456	66.81294	---	52.47456	68.74167	163.1959	0.192057	0.455953	no
Total Lead	1759.733	67.87123	---	563.1147	35.97175	---	35.97175	47.12299	111.8721	0.131657	0.31256	yes
Total Mercury	5.99883	0.085969	---	1.919626	0.045563	---	0.045563	0.059688	0.141702	0.000167	0.000396	no
Total Nickel	9279.558	1306.609	---	2969.458	692.503	---	692.503	907.1789	2153.684	2.534567	6.017179	no
Total Zinc	1125.348	1301.88	---	360.1114	689.9965	---	360.1114	471.746	1119.947	1.318011	3.129019	no
Total Cyanide	52.09869	12.22248	30189.53	16.67158	6.477916	30189.53	6.477916	8.48607	20.14632	0.023709	0.056287	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	0.000003	---	---	0.000003	0.000003	0.000003	0.000007	8.7E-009	2.1E-008	no
VOLATILE COMPOUNDS												
Benzene	2552.722	2644.287	54.22011	816.8712	1401.472	54.22011	54.22011	54.22011	129.0439	0.151486	0.360536	no
Bromoform	3325.69	3443.45	150.515	1064.221	1825.028	150.515	150.515	150.515	358.2258	0.420524	1.000847	no
Bromodichloromethane	---	---	14.31411	---	---	14.31411	14.31411	14.31411	34.06758	0.039992	0.095181	no
Carbon Tetrachloride	3098.68	3208.402	5.205131	991.5777	1700.453	5.205131	5.205131	5.205131	12.38821	0.014543	0.034611	no
Chloroform	3280.288	3396.44	303.6326	1049.692	1800.113	303.6326	303.6326	303.6326	722.6457	0.848319	2.019	no
Dibromochloromethane	---	---	22.03505	---	---	22.03505	22.03505	22.03505	52.44343	0.061564	0.146522	no
1,2-Dichloroethane	13393.56	13867.82	29.49574	4285.94	7349.943	29.49574	29.49574	29.49574	70.19986	0.082408	0.196131	no
1,1-Dichloroethylene	1316.655	1363.277	2.515813	421.3297	722.5368	2.515813	2.515813	2.515813	5.987635	0.007029	0.016729	no
1,3-Dichloropropylene	687.8389	712.1947	382.6343	220.1085	377.4632	382.6343	220.1085	288.3421	684.5373	0.805599	1.912529	no
Ethylbenzene	3632.153	3760.764	19038.87	1162.289	1993.205	19038.87	1162.289	1522.598	3614.719	4.253988	10.09916	no
Methyl Chloride	62427.63	64638.13	---	19976.84	34258.21	---	19976.84	26169.66	62127.97	73.11542	173.5793	no
Methylene Chloride	21906.42	22682.11	377.372	7010.055	12021.52	377.372	377.372	377.372	898.1453	1.05434	2.509328	no
1,1,2,2-Tetrachloro-												
ethane	1057.865	1095.323	7.807696	338.5166	580.521	7.807696	7.807696	7.807696	18.58232	0.021814	0.051917	no

Appendix B-1

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Exide Technologies, Baton Rouge Smelter

LA0004464, A11396

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	CuEffluent Effluent		MOLEffluent 95th %		Numerical Criteria		HH			
Parameters	Instream	/Tech	/Tech	1=No 95% estimate	0=95 % Non-Tech	Acute	Chronic	HHNDW	Carcinogen	Indicator
	Conc.	(Avg)	(Max)			FW	FW			"C"
	ug/L	lbs/day	lbs/day	ug/L	lbs/day	ug/L	ug/L	ug/L		
VOLATILE COMPOUNDS (cont'd)										
Tetrachloroethylene		---	---	10		1290	645	2.5		C
Toluene		---	---	10		1270	635	46200		
1,1,1-Trichloroethane		---	---	10		5280	2640			
1,1,2-Trichloroethane		---	---	10		1800	900	6.9		C
Trichloroethylene		---	---	10		3900	1950	21		C
Vinyl Chloride		---	---	10				35.8		C
ACID COMPOUNDS										
2-Chlorophenol		---	---	10		258	129	126.4		
2,4-Dichlorophenol		---	---	10		202	101	232.6		
BASE NEUTRAL COMPOUNDS										
Benzidine				50		250	125	0.00017		C
Hexachlorobenzene		---	---	10				0.00025		C
Hexachlorobutadiene		---	---	10		5.1	1.02	0.11		C
PESTICIDES										
Aldrin				0.05		3		0.0004		C
Hexachlorocyclohexane										
(gamma BHC, Lindane)				0.05		5.3	0.21	0.2		C
Chlordane				0.2		2.4	0.0043	0.00019		C
4,4'-DDT				0.1		1.1	0.001	0.00019		C
4,4'-DDE				0.1		52.5	10.5	0.00019		C
4,4'-DDD				0.1		0.03	0.006	0.00027		C
Dieldrin				0.1		0.2374	0.0557	0.00005		C
Endosulfan				0.1		0.22	0.056	0.64		
Endrin				0.1		0.0864	0.0375	0.26		
Heptachlor				0.05		0.52	0.0038	0.00007		C
Toxaphene				5		0.73	0.0002	0.00024		C
Other Parameters:										
Fecal Col. (col/100ml)										
Chlorine						19	11			
Ammonia							4000			
Chlorides										
Sulfates	1086.8				0 2314.884			120000		
TPS	2794				0 5951.22			400000		

LA0004464, AI1396

	{*1}	{*12}	{*13}	{*14}	{*15}	{*16}	{*17}	{*18}	{*19}	{*20}	{*21}	{*22}	{*23}
Toxic Parameters	WLAa	WLAc	WLAh	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL	Need	
	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBL?	
								001	001	001	001		
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day		
Tetrachloroethylene	1464.212	1516.058	10.84402	468.5477	803.5108	10.84402	10.84402	10.84402	25.80877	0.030297	0.072107	no	
Toluene	1441.511	1492.553	108592.1	461.2834	791.0532	108592.1	461.2834	604.2813	1434.591	1.688301	4.008105	no	
1,1,1-Trichloroethane	5993.052	6205.261	---	1917.777	3288.788	---	1917.777	2512.287	5964.286	7.01908	16.66362	no	
1,1,2-Trichloroethane	2043.086	2115.43	29.9295	653.7875	1121.178	29.9295	29.9295	29.9295	71.23221	0.08362	0.199016	no	
Trichloroethylene	4426.686	4583.431	91.08979	1416.54	2429.219	91.08979	91.08979	91.08979	216.7937	0.254496	0.6057	no	
Vinyl Chloride	---	---	155.2864	---	---	155.2864	155.2864	155.2864	369.5816	0.433855	1.032574	no	
ACID COMPOUNDS													
2-Chlorophenol	292.8423	303.2116	297.1004	93.70954	160.7022	297.1004	93.70954	122.7595	291.4367	0.342978	0.814245	no	
2,4-Dichlorophenol	229.2796	237.3982	546.7211	73.36949	125.8211	546.7211	73.36949	96.11403	228.1791	0.268533	0.63751	no	
BASE NEUTRAL COMPOUNDS													
Benidine	283.7619	293.8097	0.000737	90.80382	155.7191	0.000737	0.000737	0.000737	0.001755	0.000002	0.000005	no	
Hexachlorobenzene	---	---	0.001084	---	---	0.001084	0.001084	0.001084	0.002581	0.000003	0.000007	no	
Hexachlorabutadiene	5.788744	2.397487	0.477137	1.852398	1.270668	0.477137	0.477137	0.477137	1.135586	0.001333	0.003173	no	
PESTICIDES													
Aldrin	3.405143	---	0.001735	1.089646	---	0.001735	0.001735	0.001735	0.004129	0.000005	0.000012	no	
Hexachlorocyclohexane (gamma BHC, Lindane)	6.015753	0.4936	0.867522	1.925041	0.261608	0.867522	0.261608	0.342707	0.813601	0.000957	0.002273	no	
Chlordane	2.724115	0.010107	0.000824	0.871717	0.005357	0.000824	0.000824	0.000824	0.001961	0.000002	0.000005	no	
4,4'-DDT	1.248553	0.00235	0.000824	0.399537	0.001246	0.000824	0.000824	0.000824	0.001961	0.000002	0.000005	no	
4,4'-DDE	59.59001	24.68001	0.000824	19.0688	13.08041	0.000824	0.000824	0.000824	0.001961	0.000002	0.000005	no	
4,4'-DDD	0.034051	0.014103	0.001171	0.010896	0.007475	0.001171	0.001171	0.001171	0.002787	0.000003	0.000008	no	
Dieldrin	0.26946	0.130922	0.000217	0.086227	0.069388	0.000217	0.000217	0.000217	0.000516	6.1E-007	0.000001	no	
Endosulfan	0.249711	0.131627	1.504306	0.079907	0.069762	1.504306	0.069762	0.091388	0.21696	0.000255	0.000606	no	
Endrin	0.098068	0.088143	0.611124	0.031382	0.046716	0.611124	0.031382	0.04111	0.097597	0.000115	0.000273	no	
Heptachlor	0.590225	0.008932	0.000304	0.188872	0.004734	0.000304	0.000304	0.000304	0.000723	8.5E-007	0.000002	no	
Toxaphene	0.828585	0.00047	0.001041	0.265147	0.000249	0.001041	0.000249	0.000326	0.000775	9.1E-007	0.000002	no	
Other Parameters:													
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no	
Chlorine	21.56591	25.85525	---	6.90109	13.70328	---	6.90109	9.040428	21.46239	0.025258	0.059964	no	
Ammonia	---	9401.91	---	---	4983.013	---	4983.013	6527.746	15497.17	18.23787	43.29754	no	
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no	
Sulfates	---	---	520513.1	---	---	520513.1	520513.1	520513.1	1238821	1454.261	3461.142	yes	
TDS	---	---	1735044	---	---	1735044	1735044	1735044	4129404	4847.538	11537.14	yes	
	---	---	---	---	---	---	---	---	---	---	---	no	
	---	---	---	---	---	---	---	---	---	---	---	no	

APPENDIX B-2 LA0004464, AI No. 1396

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Bayou Baton Rouge
Critical Flow, Qrc (cfs): 0.7
Harmonic Mean Flow, Qrh (cfs): 1.73
Subsegment No.: 070203
Receiving Stream Hardness (mg/L): 41.53
Receiving Stream TSS (mg/L): 12
MZ Stream Factor, Fs: 1
Plume distance, Pf: N/A

Effluent Characteristics:

Company: Exide Technologies, Inc., Baton Rouge Smelter
Facility flow, Qe (MGD): 0.335 MGD, 30-Day Maximum
Effluent Hardness: 310.8
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0004464

Variable Definition:

Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow, MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Q_e}{(Q_{rc} \times 0.6463 \times F_s + Q_e)}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

Discharge from a canal:

Critical
 Dilution = $\frac{(2.8) \text{ Pw } n^{1/2}}{\text{Pf}}$

Critical
 Dilution = $\frac{(2.38) (\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}}{(2.8) \text{ Pw } n^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^{1/2}}{2.38 \text{ Pw}^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrc} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{\text{Qe}}{(\text{Qrh} \times 0.6463 + \text{Qe})}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(\text{Qrh} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

Discharge from a canal:

Critical
 Dilution = $\frac{(2.8) \text{ Pw } n^{1/2}}{\text{Pf}}$

Critical
 Dilution = $\frac{(2.38) (\text{Pw}^{1/2})}{(\text{Pf})^{1/2}}$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^*}{(2.8) \text{ Pw } n^{1/2}}$$

$$\text{WLA} = \frac{(\text{Cr}-\text{Cu}) \text{ Pf}^{1/2}*}{2.38 \text{ Pw}^{1/2}}$$

* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr - Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:

$$LTAA = WLAa \times 0.32$$

$$LTAc = WLAc \times 0.53$$

$$LTAh = WLAh$$

WQBL Calculations:

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:

$$\text{Daily Maximum} = \min(LTAA, LTAc) \times 3.11$$

$$\text{Monthly Average} = \min(LTAc, LTAh) \times 1.31$$

If human health LTA is more limiting:

$$\text{Daily Maximum} = LTAh \times 2.38$$

$$\text{Monthly Average} = LTAh$$

Mass Balance Formulas:

$$\text{mass (lbs/day)} : (\text{ug/L}) \times 1/1000 \times (\text{flow, MGD}) \times 8.34 = \text{lbs/day}$$

$$\text{concentration(ug/L)} : \frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

- (*1) Parameter being screened.
- (*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (*3) Monthly average effluent or technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present

on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

- (*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
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Copper	$1 + (10^{4.86} \times \text{TSS}^{-0.72} \times \text{TSS}) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times \text{TSS}^{-0.85} \times \text{TSS}) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times \text{TSS}^{-0.52} \times \text{TSS}) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

- (*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (*12) Wasteload Allocation for acute aquatic criteria (WLAA). Dilution type WLAA is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAA formulas for streams:

$$\text{WLAA} = (\text{Cr}/\text{Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

Dilution WLAA formulas for static water bodies:

$$\text{WLAA} = (\text{Cr}-\text{Cu})/\text{Dilution Factor}$$

Cr represents aquatic acute numerical criteria from column (*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAc formula:

$$WLAc = (Cr/Dilution\ Factor) - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAc formulas for static water bodies:

$$WLAc = (Cr-Cu)/Dilution\ Factor$$

Cr represents aquatic chronic numerical criteria from column (*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution

WLAh formula:

$$WLAh = (Cr/Dilution\ Factor) - \frac{(Fs \times Qrc, Qrh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:

$$WLAh = (Cr-Cu)/Dilution\ Factor$$

Cr represents human health numerical criteria from column (*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*15) Long Term Average for aquatic numerical criteria (LTAA). WLAA numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. $WLAA \times 0.32 = LTAA$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. $WLAc \times 0.53 = LTAc$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. $WLAh \times 1 = LTAh$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.
- (*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{\text{limiting aquatic}} \times 1.31 = WQBL_{\text{monthly average}}$). If human health criteria was the most limiting criteria then $LTA_{\text{h}} = WQBL_{\text{monthly average}}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.
- (*20) End of pipe Water Quality Based Limit (WQBL) daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 3.11 = WQBL_{\text{daily max}}$). If human health criteria was the most limiting criteria then LTA_{h} is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 2.38 = WQBL_{\text{daily max}}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.
- (*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. $\text{Monthly average WQBL, ug/l/1000} \times \text{facility flow, MGD} \times 8.34 = \text{monthly average WQBL, lbs/day}$.
- (*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. $\text{Daily maximum WQBL, ug/l/1000} \times \text{facility flow, MGD} \times 8.34 = \text{daily maximum WQBL, lbs/day}$.
- (*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

Appendix C

Please print or type in the unshaded areas only.

FORM 2 C NPDES	EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS <i>Consolidated Permits Program</i>
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II. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water

A. OUTFALL NUMBER <i>(list)</i>	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER <i>Oi(name)</i>
	1. DEG	2. MIN	3. SEC	1. DEG	2. MIN.	3. SEC	
101	30	35		91	14		Baton Rouge Bayou Mississippi River Basin 070203
001	30	35	9	91	14	45	Baton Rouge Bayou Mississippi River Basin 070203
002	30	35	6	91	14	44	Baton Rouge Bayou Mississippi River Basin 070203
003	30	35	15	91	14	33	Baton Rouge Bayou Mississippi River Basin 070203

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g. for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

[illegible]

PLEASE PRINT OR TYPE IN THE UNSHADED AREA ONLY. You may report some or all of this information on separate sheets (use the same format) instead of completing these pages.
SEE INSTRUCTIONS

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OUTFALL NO
001

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT				3. UNITS (specify if blank)				4. INTAKE (optional)		5. NO. OF ANALYSES
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVERAGE VALUE		d. LONG TERM AVERAGE VALUE		e. NO. OF ANALYSES		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (BOD)	<2.0										1
b. Chemical Oxygen Demand (COD)	8.00	3.18									1
c. Total Organic Carbon (TOC)	14.4	11.5	14.4	11.5	3.4	3.9					20
d. Total Suspended Solids (TSS)	27	39.5	8.5	18.6	5.2	8.7					73
e. Ammonia (as N)	1.15	0.46									1
f. Flow	VALUE	2.250	VALUE	0.335	VALUE	0.245					continuous
g. Temperature (winter)	VALUE		VALUE		VALUE						°C
h. Temperature (summer)	VALUE		VALUE		VALUE						°F
i. pH	MINIMUM	5.3	MAXIMUM	12	MINIMUM		MAXIMUM				continuous

PART B. Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is listed either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data to an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. INTAKE (optional)		6. NO. OF ANALYSES
	a. BE- LIEVED PRESENT	b. BE- LIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. LONG TERM AVERAGE VALUE		d. LONG TERM AVERAGE VALUE		e. NO. OF ANALYSES		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	
a. Bromide (SEE NOTE 4)	X												
b. Chloride	X												
c. Total Residual	X												
d. Total Chlorine	X												
e. Fluoride (SEE NOTE 4)	X												
f. Nitrate (SEE NOTE 4)	X												
g. Nitrite (as N)	X												

ITEM V.B CONTINUED FROM FRONT										EPA I.D. NUMBER (copy from Item 1 of Form 1)				OUTFALL NO			
										LA 0004464				001			
1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT				4. UNITS				5. INTAKE (if available)				6. NUMBER OF ANALYSES		
	a. RE-TESTED PRESENT	b. RE-TESTED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE		c. NO. OF ANALYSES	d. CON. CENTRATION	e. MASS	f. MASS	a. LONG TERM AVERAGE VALUE		b. CON. CENTRATION	c. MASS	d. CON. CENTRATION	e. MASS	f. MASS
			(1) CON. CENTRATION	(2) MASS	(1) CON. CENTRATION	(2) MASS					(1) CON. CENTRATION	(2) MASS					
g. Nitrogen, Total Organic (as N)	X		0.85	0.26			1										
h. Oil and Grease	X		4	23	6.9	19.1	73	mg/L	lbs/day								
i. Phosphorus (as P), Total (7723-14-0)			0.249	0.10			1	mg/L	lbs/day								
j. Radioactivity																	
(1) Alpha, Total	X		22.68				1	pCi/L									
(2) Beta, Total	X		6.48				1	pCi/L									
(3) Radium, Total	X		0.88				1	pCi/L									
k. Sulfate (as SO ₄), (14808-79-8)	X		389	155			1	mg/L	lbs/day								
l. Sulfide (as S)		X	<1				1	mg/L	lbs/day								
m. Sulfide (as SO ₄), (14263-45-3)		X	<2				1	mg/L	lbs/day								
n. Surfactants																	
o. Aluminum, Total (7429-90-5)		X	0.086	0.03			1	mg/L	lbs/day								
p. Barium, Total (7440-39-3)		X	<0.2				1	mg/L	lbs/day								
q. Boron, Total (7440-42-9)		X	<0.2				1	mg/L	lbs/day								
r. Cobalt, Total (7440-48-4)		X	0.772	0.31			1	mg/L	lbs/day								
s. Iron, Total (7439-89-6)		X	<0.010				1	mg/L	lbs/day								
t. Magnesium, Total (7439-95-4)		X	0.18	0.07			1	mg/L	lbs/day								
u. Molybdenum, Total (7439-98-7)		X	1.08	0.43			1	mg/L	lbs/day								
v. Manganese, Total (7439-96-5)		X	<0.05				1	mg/L	lbs/day								
w. Tin, Total (7440-31-5)		X	0.019	0.01			1	mg/L	lbs/day								
x. Titanium, Total (7440-32-6)		X	<0.05				1	mg/L	lbs/day								

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ITEM V-C CONTINUED

PART C -
If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GCMS fractions you must test for. Mark "X" in column 2-a for all such GCMS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GCMS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant your believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2c for acetone, acrylonitrile, 2,4-dinitrophenol, 2,4-dinitrophenol or 2-naphthyl-4,6-dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (at 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X"		3. EFFLUENT				4. UNITS				5. LONG TERM AVERAGE VALUE (if available)				6. NUMBER OF ANALYSES	7. LONG TERM AVERAGE VALUE (if available)	8. UNIT	9. LONG TERM AVERAGE VALUE (if available)	10. UNIT	11. LONG TERM AVERAGE VALUE (if available)	12. UNIT	13. LONG TERM AVERAGE VALUE (if available)	14. UNIT	15. LONG TERM AVERAGE VALUE (if available)	16. UNIT	17. LONG TERM AVERAGE VALUE (if available)	18. UNIT	19. LONG TERM AVERAGE VALUE (if available)	20. UNIT	21. LONG TERM AVERAGE VALUE (if available)	22. UNIT	23. LONG TERM AVERAGE VALUE (if available)	24. UNIT	25. LONG TERM AVERAGE VALUE (if available)	26. UNIT	27. LONG TERM AVERAGE VALUE (if available)	28. UNIT	29. LONG TERM AVERAGE VALUE (if available)	30. UNIT	31. LONG TERM AVERAGE VALUE (if available)	32. UNIT	33. LONG TERM AVERAGE VALUE (if available)	34. UNIT	35. LONG TERM AVERAGE VALUE (if available)	36. UNIT	37. LONG TERM AVERAGE VALUE (if available)	38. UNIT	39. LONG TERM AVERAGE VALUE (if available)	40. UNIT	41. LONG TERM AVERAGE VALUE (if available)	42. UNIT	43. LONG TERM AVERAGE VALUE (if available)	44. UNIT	45. LONG TERM AVERAGE VALUE (if available)	46. UNIT	47. LONG TERM AVERAGE VALUE (if available)	48. UNIT	49. LONG TERM AVERAGE VALUE (if available)	50. UNIT	51. LONG TERM AVERAGE VALUE (if available)	52. UNIT	53. LONG TERM AVERAGE VALUE (if available)	54. UNIT	55. LONG TERM AVERAGE VALUE (if available)	56. UNIT	57. LONG TERM AVERAGE VALUE (if available)	58. UNIT	59. LONG TERM AVERAGE VALUE (if available)	60. UNIT	61. LONG TERM AVERAGE VALUE (if available)	62. UNIT	63. LONG TERM AVERAGE VALUE (if available)	64. UNIT	65. LONG TERM AVERAGE VALUE (if available)	66. UNIT	67. LONG TERM AVERAGE VALUE (if available)	68. UNIT	69. LONG TERM AVERAGE VALUE (if available)	70. UNIT	71. LONG TERM AVERAGE VALUE (if available)	72. UNIT	73. LONG TERM AVERAGE VALUE (if available)	74. UNIT	75. LONG TERM AVERAGE VALUE (if available)	76. UNIT	77. LONG TERM AVERAGE VALUE (if available)	78. UNIT	79. LONG TERM AVERAGE VALUE (if available)	80. UNIT	81. LONG TERM AVERAGE VALUE (if available)	82. UNIT	83. LONG TERM AVERAGE VALUE (if available)	84. UNIT	85. LONG TERM AVERAGE VALUE (if available)	86. UNIT	87. LONG TERM AVERAGE VALUE (if available)	88. UNIT	89. LONG TERM AVERAGE VALUE (if available)	90. UNIT	91. LONG TERM AVERAGE VALUE (if available)	92. UNIT	93. LONG TERM AVERAGE VALUE (if available)	94. UNIT	95. LONG TERM AVERAGE VALUE (if available)	96. UNIT	97. LONG TERM AVERAGE VALUE (if available)	98. UNIT	99. LONG TERM AVERAGE VALUE (if available)	100. UNIT	101. LONG TERM AVERAGE VALUE (if available)	102. UNIT	103. LONG TERM AVERAGE VALUE (if available)	104. UNIT	105. LONG TERM AVERAGE VALUE (if available)	106. UNIT	107. LONG TERM AVERAGE VALUE (if available)	108. UNIT	109. LONG TERM AVERAGE VALUE (if available)	110. UNIT	111. LONG TERM AVERAGE VALUE (if available)	112. UNIT	113. LONG TERM AVERAGE VALUE (if available)	114. UNIT	115. LONG TERM AVERAGE VALUE (if available)	116. UNIT	117. LONG TERM AVERAGE VALUE (if available)	118. UNIT	119. LONG TERM AVERAGE VALUE (if available)	120. UNIT	121. LONG TERM AVERAGE VALUE (if available)	122. UNIT	123. LONG TERM AVERAGE VALUE (if available)	124. UNIT	125. LONG TERM AVERAGE VALUE (if available)	126. UNIT	127. LONG TERM AVERAGE VALUE (if available)	128. UNIT	129. LONG TERM AVERAGE VALUE (if available)	130. UNIT	131. LONG TERM AVERAGE VALUE (if available)	132. UNIT	133. LONG TERM AVERAGE VALUE (if available)	134. UNIT	135. LONG TERM AVERAGE VALUE (if available)	136. UNIT	137. LONG TERM AVERAGE VALUE (if available)	138. UNIT	139. LONG TERM AVERAGE VALUE (if available)	140. UNIT	141. LONG TERM AVERAGE VALUE (if available)	142. UNIT	143. LONG TERM AVERAGE VALUE (if available)	144. UNIT	145. LONG TERM AVERAGE VALUE (if available)	146. UNIT	147. LONG TERM AVERAGE VALUE (if available)	148. UNIT	149. LONG TERM AVERAGE VALUE (if available)	150. UNIT	151. 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EPA I.D. NUMBER (copy from Item 1 of Form 1)

LA0004464

OUTFALL NO
001

ITEM V.C. CONTINUED

1. POLLUTANT AND CAS NO		2. MARK 'X'		3. EFFLUENT				4. UNITS		5. INTAKE (optional)			6. NUMBER OF ANALYSES
		TESTED BY QUINCY	BE-LEVIED PRESENT	BE-LEVIED ABSENT	a. MAXIMUM DAILY VALUE (1) CON- CENTRATION	b. MAXIMUM 30 DAY VALUE (1) CON- CENTRATION	c. LONG TERM AVERAGE VALUE (1) CON- CENTRATION	d. NO OF ANALYSES	a. CON- CENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CON- CENTRATION	b. MASS	
GC/MS FRACTION - VOLATILE COMPOUNDS													
1V. Acetone (107-62-8)	X		X							ug/L	lbs/day		
2V. Acrylonitrile (107-13-1)	X		X							ug/L	lbs/day		
3V. Benzene (71-43-2)	X		X							ug/L	lbs/day		
5V. Bromotoluene (75-35-2)	X		X							ug/L	lbs/day		
6V. Carbon Tetrachloride (56-23-5)	X		X							ug/L	lbs/day		
7V. Chlorobenzene (108-90-7)	X		X							ug/L	lbs/day		
8V. Chlorodibromomethane (124-48-1)	X		X							ug/L	lbs/day		
9V. Chloroethane (75-00-3)	X		X							ug/L	lbs/day		
10V. 2-Chloroethylvinyl Ether (10-75-8)	X		X							ug/L	lbs/day		
11V. Chloroform (67-66-3)	X		X							ug/L	lbs/day		
12V. Dichlorobromomethane (75-27-4)	X		X							ug/L	lbs/day		
14V. 1,1-Dichloroethane (75-34-3)	X		X							ug/L	lbs/day		
15V. 1,2-Dichloroethane (107-06-2)	X		X							ug/L	lbs/day		
16V. 1,1-Dichloroethane (75-35-4)	X		X							ug/L	lbs/day		
17V. 1,2-Dichloropropane (78-87-5)	X		X							ug/L	lbs/day		
18V. 1,3-Dichloropropane (542-75-6)	X		X							ug/L	lbs/day		
19V. Ethylbenzene (100-41-1)	X		X							ug/L	lbs/day		
20V. Methyl Bromide (74-83-9)	X		X							ug/L	lbs/day		
21V. Methyl Chloride (74-87-3)	X		X							ug/L	lbs/day		

EPA I.D. NUMBER (copy from Item 1 of Form 1)

LA0004464

OUTFALL NO

001

ITEM V-C CONTINUED

1. POLLUTANT AND CAS NO		2. MARK 'X'		3. EFFLUENT				4. UNITS		5. INTAKE (optional)		6. NUMBER OF ANALYSIS
• TEST: INQ RE- QUERED	• RE- LEVIED PRESENT	• BR- LEVIED ABSENT	• MAXIMUM DAILY VALUE (1) CON- CENTRATION	• MAXIMUM DAILY VALUE (2) MASS	• MAXIMUM 30 DAY VALUE (1) CON- CENTRATION	• MAXIMUM 30 DAY VALUE (2) MASS	• CON- CENTRATION	• MASS	• LONG TERM AVERAGE VALUE (1) CON- CENTRATION		• LONG TERM AVERAGE VALUE (2) MASS	
									(1) CON- CENTRATION	(2) MASS		
GC/MS FRACTION: VOLATILE COMPOUNDS (continued)												
2V. Methylene Chloride (75-09-2)	X	X		<5.00				1	ug/L	lbs/day		
2V. 1,1,2,2-Tetra- chloroethane (79-34-5)	X	X		<5.00				1	ug/L	lbs/day		
2A.V. Trichloro- ethylene (127-18-4)	X	X		<5.00				1	ug/L	lbs/day		
2V. Toluene (108-88-3)	X	X		<5.00				1	ug/L	lbs/day		
2B.V. 1,2-Trisub-dichloro- ethylene (156-60-5)	X	X		<5.00				1	ug/L	lbs/day		
2V. 1,1,1-Trichloro- ethane (71-55-6)	X	X		<5.00				1	ug/L	lbs/day		
2B.V. 1,1,2-Trichloro- ethane (79-04-5)	X	X		<5.00				1	ug/L	lbs/day		
2B.V. Trichloro- ethylene (79-01-6)	X	X		<5.00				1	ug/L	lbs/day		
3V. Vinyl Chloride (75-01-4)	X	X		<5.00				1	ug/L	lbs/day		
GC/MS FRACTION: ACID COMPOUNDS												
1A. 2-Chlorophenol (95-57-8)	X	X		<10.00				1	ug/L	lbs/day		
2A. 2,4-Dichloro- phenol (120-83-2)	X	X		<10.00				1	ug/L	lbs/day		
3A. 2,4-Dimethyl- phenol (105-67-9)	X	X		<10.00				1	ug/L	lbs/day		
4A. 4,6-Dinitro-O- cresol (534-52-1)	X	X		<25.00				1	ug/L	lbs/day		
5A. 2,4-Dinitro- phenol (51-28-5)	X	X		<25.00				1	ug/L	lbs/day		
6A. 2-Nitrophenol (88-73-5)	X	X		<10.00				1	ug/L	lbs/day		
7A. 4-Nitrophenol (100-02-7)	X	X		<25.00				1	ug/L	lbs/day		
8A. P-Chloro-M cresol (59-50-7)	X	X		<10.00				1	ug/L	lbs/day		
9A. Pentachloro- phenol (87-86-3)	X	X		<25.00				1	ug/L	lbs/day		
10A. Phenol (108-95-2)	X	X		<10.00				1	ug/L	lbs/day		
11A. 2,4,6-Trichloro- phenol (88-06-2)	X	X		<10.00				1	ug/L	lbs/day		

CONTINUED ON NEXT PAGE

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Computer Generated EPA Form 3510-2C (Rev. 3-85)

EPA I.D. NUMBER (copy from Item 1 of Form 1)												OUTFALL NO		
L A 0004464												001		
ITEM V-C CONTINUED														
1. POLLUTANT AND CAS NO. (if available)		2. MARK 'X'			3. EFFLUENT			4. UNITS		5. INTAKE (optional)				
		6. TEST INQUIRY GUIDED	7. RE-LEVELY PRESENT	8. RE-LEVELY ABSENT	9. MAXIMUM DAILY VALUE (1) CONCENTRATION	10. MAXIMUM 30 DAY VALUE (2) MASS	11. MAXIMUM 90 DAY VALUE (3) CONCENTRATION	12. LONG TERM AVERAGE VALUE (4) MASS	13. CONCENTRATION	14. MASS	15. INTAKE (optional)			
GENUS FRACTION - BASE/NEUTRAL COMPOUNDS														
11. Acenaphthene (81-32-9)	X		X		X									
21. Acenaphthylene (208-96-8)	X		X		X									
31. Anthracene (120-12-7)	X		X		X									
41. Benzidine (91-87-5)	X		X		X									
51. Benzofluorene (56-55-3)	X		X		X									
61. Benzofluorene (56-55-3)	X		X		X									
71. 3,4-Benzofluorene (205-99-2)	X		X		X									
81. Benzofluorene (205-99-2)	X		X		X									
91. Benzofluorene (205-99-2)	X		X		X									
101. Bis(2-chloroethoxy)methane (111-91-1)	X		X		X									
111. Bis(2-chloroethoxy)methane (111-91-1)	X		X		X									
121. Bis(2-chloroethoxy)methane (102-60-1)	X		X		X									
131. Bis(2-ethylhexyloxy)methane (117-81-7)	X		X		X									
141. 4-Bromophenyl (101-55-3)	X		X		X									
151. Butyl Benzyl (105-66-7)	X		X		X									
161. 2-Chloronaphthalene (91-58-7)	X		X		X									
171. 4-Chlorophenyl (1005-72-3)	X		X		X									
181. Chrysene (218-01-9)	X		X		X									
191. Dibenz(a,h) Anthracene (53-70-3)	X		X		X									
201. 1,2-Dichlorobenzene (95-50-1)	X		X		X									
211. 1,3-Dichlorobenzene (54-73-1)	X		X		X									

ITEM V.C. CONTINUED										EPA I.D. NUMBER (copy from Item 1 of Form 1) LA0004464										OUTFALL NO 001	
1. POLLUTANT AND CAS NO (if available)	2. MARK 'X'			3. EFFLUENT				4. UNITS		5. INTAKE (gallons/day)		6. ANALYSES									
	a. TEST: (N/A) QUICK	b. BE: LIVED PRESENT	c. DE: LIVED ABSENT	1. MAXIMUM DAILY VALUE (1) CON- CENTRATION	2. MAXIMUM 30 DAY VALUE (2) CON- CENTRATION	3. MAXIMUM 90 DAY VALUE (3) CON- CENTRATION	4. LONG TERM AVERAGE VALUE (4) CON- CENTRATION	a. NO OF ANALYSES	b. MASS	(1) CON- CENTRATION	(2) MASS										
22a 1,4-Dichlorobenzene (106-46-7)	X		X	<10.00				1	lbs/day	ug/L											
22b 3,3-Dichlorobenzidine (91-94-1)	X		X	<20.00				1	lbs/day	ug/L											
24B Diethyl Phthalate (84-66-2)	X		X	<10.00				1	lbs/day	ug/L											
25B Dimethyl Phthalate (131-11-3)	X		X	<10.00				1	lbs/day	ug/L											
26B Di-N-Butyl Phthalate (84-74-2)	X		X	<10.00				1	lbs/day	ug/L											
27B 2,4-Dinitrotoluene (121-14-2)	X		X	<10.00				1	lbs/day	ug/L											
28B 2,6-Dinitrotoluene (89-20-2)	X		X	<10.00				1	lbs/day	ug/L											
29B Di-N-Octyl Phthalate (117-84-0)	X		X	<10.00				1	lbs/day	ug/L											
30B 1,3-Diphenylhydrazine (as azobenzene) (122-66-7)	X		X	<10.00				1	lbs/day	ug/L											
31B Fluoranthene (206-44-0)	X		X	<10.00				1	lbs/day	ug/L											
32B Fluorene (86-73-7)	X		X	<10.00				1	lbs/day	ug/L											
33B Hexafluorobenzene (118-74-1)	X		X	<10.00				1	lbs/day	ug/L											
34B Heptachlorodibenzodioxin (87-46-3)	X		X	<10.00				1	lbs/day	ug/L											
35B Heptachlorocyclopentadiene (77-47-4)	X		X	<10.00				1	lbs/day	ug/L											
36B Heptachlorodibenzodioxin (87-46-3)	X		X	<10.00				1	lbs/day	ug/L											
37B Isobutene (1,2,3,4-d)	X		X	<10.00				1	lbs/day	ug/L											
38B Isophthalonitrile (78-50-1)	X		X	<10.00				1	lbs/day	ug/L											
39B Naphthalene (91-20-3)	X		X	<10.00				1	lbs/day	ug/L											
40B Nitrobenzene (98-95-3)	X		X	<10.00				1	lbs/day	ug/L											
41B N-Nitrosodimethylamine (62-75-9)	X		X	<10.00				1	lbs/day	ug/L											
42B N-Nitroso-Di-n-Propylamine (833-64-7)	X		X	<10.00				1	lbs/day	ug/L											

LA0004464

OUTFALL NO
001

ITEM V-C CONTINUED

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X'		3. EFFLUENT				4. UNITS		5. INTAKE (optional)				
	a. TEST SOURCE COVERED	b. IF LIVED/ PRESENT	c. BE- LIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE: LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CON- CENTRATION	b. MASS	e. LIVING TERM AVERAGE VALUE		b. NUMBER OF ANALYSES
				(1) CON- CENTRATION	(2) MASS	(1) CON- CENTRATION	(2) MASS				(1) CON- CENTRATION	(2) MASS	
418. N-Nitrosodiphenyl-amine (86-30-6)	X		X	<10.00				1	ug/L	lbs/day			
443. Phenanthrene (85-01-8)	X		X	<10.00				1	ug/L	lbs/day			
458. Pyrene (129-00-1)	X		X	<10.00				1	ug/L	lbs/day			
468. 1,2,4-Trichloro- benzene (120-82-1)	X		X	<10.00				1	ug/L	lbs/day			
GC/MS FRACTION - PESTICIDES													
1P. Aldrin (309-00-2)	X		X	<0.0500				1	ug/L	lbs/day			
2P. ALPHA-BHC (319-84-6)	X		X	<0.0500				1	ug/L	lbs/day			
3P. BETA-BHC (319-85-7)	X		X	<0.0500				1	ug/L	lbs/day			
4P. DELTA-BHC (58-89-9)	X		X	<0.0500				1	ug/L	lbs/day			
5P. GAMMA-BHC (319-86-8)	X		X	<0.0500				1	ug/L	lbs/day			
6P. Chlordane, Technical (57-74-9)	X		X	<0.100				1	ug/L	lbs/day			
7P. 4,4'-DDT (50-29-3)	X		X	<0.100				1	ug/L	lbs/day			
8P. 4,4'-DDE (72-55-9)	X		X	<0.100				1	ug/L	lbs/day			
9P. 4,4'-DDE (72-54-8)	X		X	<0.100				1	ug/L	lbs/day			
10P. Dieldrin (60-57-1)	X		X	<0.100				1	ug/L	lbs/day			
11P. ALPHA-Endosulfen I (115-29-7)	X		X	<0.0500				1	ug/L	lbs/day			
12P. BETA-Endosulfen II (115-29-7)	X		X	<0.100				1	ug/L	lbs/day			
13P. Endosulfen Sulfate (1031-07-8)	X		X	<0.100				1	ug/L	lbs/day			
14P. Endosul (72-20-8)	X		X	<0.100				1	ug/L	lbs/day			
15P. Endosul Aldehyde (7421-93-4)	X		X	<0.100				1	ug/L	lbs/day			

Part A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See Instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values (include units)		Average Values (include units)		Number of Storm Events Sampled	OUTFALL 001 Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-weighted Composite		
Oil and Grease	<5.0 mg/L	N/A			1	WWTU
Biological Oxygen Demand (BOD5)	<2.0 mg/L	32.2 mg/L			1	WWTU
Chemical Oxygen Demand (COD)	9.00 mg/L	68.0 mg/L			1	WWTU
Total Suspended Solids (TSS)	71.0 mg/L	69.0 mg/L			1	WWTU
Total Nitrogen	0.87 mg/L	1.91 mg/L			1	WWTU
Total Phosphorus	0.32 mg/L	0.10 mg/L			1	WWTU
pH	Minimum	Maximum	Minimum	Maximum		

Part 8. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

[illegible]

Continued from the Front

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
9/23 2005			> 72		

7. Provide a description of the method of flow measurement or estimate.

Rainfall data and area runoff calculations.

Continued from the Front

Part C - List each pollutant shown in Tables 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall.

[illegible]

Part D - Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm Event (in minutes)	3. Total rainfall during storm event (in inches)	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event (gallons/minute or specify units)	6. Total flow from rain event (gallons or specify units)
9/23 2005			72		

7. Provide a description of the method of flow measurement or estimate.

Rainfall data and area runoff calculations.

Appendix D

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0004464**

Facility Name: **Exide Technologies, Baton Rouge Smelter**

Previous Critical Dilution: **50% (WET limit)** Proposed Critical Dilution: **43% (WET limit)**

Date of Review: **02/24/06**

Name of Reviewer: **Kim Gunderson**

Recommended Frequency by Species:

Pimephales promelas (Fathead minnow): **Once/Quarter¹**

Ceriodaphnia dubia (water flea): **Once/Quarter¹**

Recommended Dilution Series: **18%, 24%, 32%, 43%, and 57%**

Number of Tests Performed during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **15 (4 retests)**

Daphnia pulex (water flea): **N/A – Testing of species was not required**

Daphnia magna (water flea): **N/A – Testing of species was not required**

Ceriodaphnia dubia (water flea): **18 (5 retests)**

Number of Failed Tests during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **3 (one with sub-lethal only)**

Daphnia pulex (water flea): **N/A – Testing of species was not required**

Daphnia magna (water flea): **N/A – Testing of species was not required**

Ceriodaphnia dubia (water flea): **5 (one with sub-lethal only)**

Failed Test Dates during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **Test dates: 02/20/01; Test periods: 10/01/04-03/31/05 (sub-lethal); and 05/01/05-10/31/05**

Daphnia pulex (water flea): **N/A – Testing of species was not required**

Daphnia magna (water flea): **N/A – Testing of species was not required**

Ceriodaphnia dubia (water flea): **Test periods: 10/01/04-03/31/05; 05/01/05-05/31/05 (sub-lethal); 05/01/05-10/31/05; 11/01/05-11/30/05, and 12/01/05-12/31/05**

Previous TRE Activities:

In compliance with Order for Information Docket Number VI-90-1136, which superseded and closed Order for Information Docket Number 6-89-1782, the permittee conducted a Toxicity Reduction Evaluation (TRE) of Outfall 001. The established

¹ Since a WET limit shall be incorporated into this permit, quarterly testing is required for the first five years following the effective date of the WET limit in the new permit. Following successful completion of this period with no demonstrated lethal or sub-lethal effects, a reduction may be appropriate.

monitoring frequency was quarterly and the effluent dilution series consisted of 6.25%, 12.5%, 25%, 50%, and 100% concentrations, with the 100% effluent concentration being defined as the critical dilution. Data on file indicate that lethality was exhibited to the species during the TRE process with Lead as the suspected toxicant. Additional information indicate Lead concentrations exceeded EPA criteria for freshwater aquatic toxicity and due to the absence of a promulgated water quality standard for Lead by the State, a Whole Effluent Toxicity (WET) limit was incorporated in LA0004464. The WET limit continued in the renewed LPDES permit LA0004464, effective April 1, 2001.

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

Exide Technologies, Baton Rouge Smelter owns and operates a secondary lead smelter in Baton Rouge, East Baton Rouge Parish, Louisiana. LPDES Permit LA0004464, effective April 1, 2001, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 001 for *Ceriodaphnia dubia* and *Pimephales promelas*. The effluent series consisted of 21.1%, 28.1%, 37.5%, 50%, and 66.7% concentrations, with the 50% effluent concentration being defined as the critical dilution and/or WET limit. Testing was to be performed once every six months for the *Ceriodaphnia dubia* and the *Pimephales promelas*. Data on file indicate that the permittee continues to experience toxicity with four lethal and five sub-lethal failures to the *Ceriodaphnia dubia* and two lethal and three sub-lethal failures to the *Pimephales promelas*.

Therefore, it is recommended that freshwater chronic biomonitoring with a WET limit continue to be an effluent characteristic of Outfall 001 (a discharge of 0.335 MGD of non-contact cooling water, VSA 02 plant overflow, post first-flush stormwater runoff, and previously treated effluent from Internal Outfall 101 [comprised of treated combined process wastewaters, sanitary wastewater, leachate from a closed and active non-hazardous solid waste landfill, first-flush stormwater runoff, and leachate from post-closure hazardous waste piles nos. 1 and 2]) in LA0004464. The effluent dilution series shall be 18%, 24%, 32%, 43%, and 57% concentrations, with the 43% effluent concentration being defined as the critical dilution and/or WET limit. The recommended biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas* for the term of the permit.

Additional monitoring shall be conducted upon the usage of chlorine or any biofouling agent(s).

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.

Appendix E

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Permit No. LA0004464

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001)

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 001, the continuous discharge of treated process wastewater, sanitary wastewater, leachate from an old and new non-hazardous solid waste landfill, first-flush stormwater (#1), untreated noncontact cooling water, and stormwater (estimated flow is 0.453 MGD).

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		Other Units				Measurement Frequency	Sample Type
		(lbs/day, UNLESS STATED)	(mg/L, UNLESS STATED)	Monthly Average	Daily Maximum		
Flow-MGD	50050	Report	Report	---	---	Continuous	Recorder
pH Range Excursions (Continuous Monitoring), Number of Events >60 Minutes	82581	---	0(*2)	---	---	Continuous	Recorder
pH Range Excursions (Continuous Monitoring), Monthly Total Accumulated Time in Minutes	82582	---	446(*2)	---	---	Continuous	Recorder
pH Minimum/Maximum Values (Standard Units)	00400	---	---	Report(*2) (Min)	Report(*2) (Max)	Continuous	Recorder
TOC	00680	---	---	---	50	1/month	24-hr. Composite
TSS	00530	22.6	45.1	---	---	1/week	24-hr. Composite
Oil & Grease	03582	19.2	28.8	---	---	1/week	Grab
Total Antimony	01097	0.74	1.45	---	---	1/week	24-hr. Composite
Total Arsenic	01002	0.37	0.86	---	---	1/week	24-hr. Composite
Total Lead	01051	0.14	0.25	---	---	1/week	24-hr. Composite
Total Zinc	01092	0.55	1.01	---	---	1/week	24-hr. Composite
		Monthly Average	Weekly Average	Monthly Average	Weekly Average	Measurement Frequency	Sample Type
Fecal Coliform, col/100 ml	74055	---	---	200	400	1/month	Grab

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Permit No. LA0004464

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001, continued)

<u>WHOLE EFFLUENT (CHRONIC)</u>				(Percent X, UNLESS STATED)			
<u>TOXICITY LIMIT</u>	STORET			Monthly Avg	7-Day	Measurement	Sample
	Code			Minimum	Minimum	Frequency	Type
Whole Effluent Lethality (7-Day NOEC)	22414	---	---	50%	50%	1/6 months	24-hr. Composite
NOEC, Pass/Fail [0/1], Lethality, Static Renewal, 7-Day Chronic, <u>Pimephales promelas</u>	TLP6C	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Pass/Fail [0/1], Growth, Static Renewal, 7-Day Chronic, <u>Pimephales promelas</u>	TGP6C	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Value [X], Lethality, Static Renewal, 7-Day Chronic, <u>Pimephales promelas</u>	TOP6C	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Value [X], Growth, Static Renewal, 7-Day Chronic, <u>Pimephales promelas</u>	TPP6C	---	---	Report	Report	1/6 months	24-hr. Composite
Coe. of Variation, Value, Static Renewal, 7-Day Chronic, Lethality <u>Pimephales promelas</u>	TOP6C	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Pass/Fail [0/1], Lethality, Static Renewal, 7-Day Chronic, <u>Ceriodaphnia dubia</u>	TLP3B	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Pass/Fail [0/1], Reproduction, Static Renewal, 7-Day Chronic, <u>Ceriodaphnia dubia</u>	TGP3B	---	---	Report	Report	1/6 months	24-hr. Composite
NOEC, Value [X], Lethality, Static Renewal, 7-Day Chronic <u>Ceriodaphnia dubia</u>	TOP3B	---	---	Report	Report	1/6 months	24-hr. Composite

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EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 001, continued)

<u>WHOLE EFFLUENT (CHRONIC)</u> <u>TOXICITY LIMIT</u>	STORET Code	(Percent %, UNLESS STATED)		Monthly Avg Minimum	7-Day Minimum	Measurement Frequency	Sample Type
NOEC, Value (%), Reproduction, Static Renewal, 7-Day Chronic, <u>Ceriodaphnia dubia</u>	TPP38	---	---	Report	Report	1/6 months	24-hr. Composite
Coe. of Variation, Value, Static Renewal, 7-Day Chronic, Reproduction <u>Ceriodaphnia dubia</u>	TPP38	---	---	Report	Report	1/6 months	24-hr. Composite

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 001, at the point of discharge from the concrete weir, prior to combining with the waters of Bayou Baton Rouge.

FOOTNOTE(S):

(*1) First flush stormwater shall be defined as the first one inch of precipitation to fall on the 10.4 acre production area of the plant, which is equivalent to the first 276,000 gallons of runoff. Additional stormwater after the first flush is diverted directly to the outfall.

(*2) The pH shall be within the range of 7.0 - 10.0 standard units at all times subject to the continuous monitoring pH range excursion provisions at Part II.1.

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 002)

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 002, the intermittent discharge of stormwater from the employee parking lot plus the empty and covered truck trailer storage areas.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		(lbs/day, UNLESS STATED)		Other Units (mg/L, UNLESS STATED)		Measurement Frequency(*1)	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	50050	Report	Report	---	---	1/month	Estimate
TOC	00680	---	---	---	50	1/month	Grab
Oil and Grease	03582	---	---	---	15	1/month	Grab
Total Antimony	01097	---	---	---	Report	1/month	Grab
Total Arsenic	01002	---	---	---	Report	1/month	Grab
Total Lead	01051	---	---	---	Report	1/month	Grab
Total Zinc	01092	---	---	---	Report	1/month	Grab
pH Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*2) (Min)	9.0 (*2) (Max)	1/month	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 002, at the point of discharge into the south drainage ditch prior to combining with any other waters.

FOOTNOTE(S):

(*1) When discharging.

(*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

PART I

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Permit No. LA0004464

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Outfall 003)

During the period beginning the effective date and lasting through the expiration date the permittee is authorized to discharge from:

Outfall 003, the intermittent discharge of stormwater from the outside equipment storage area behind the #2 warehouse.

Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	STORET Code	Discharge Limitations				Monitoring Requirements	
		(lbs/day, UNLESS STATED)		Other Units (mg/L, UNLESS STATED)		Measurement Frequency(*1)	Sample Type
		Monthly Average	Daily Maximum	Monthly Average	Daily Maximum		
Flow-MGD	50050	Report	Report	---	---	1/month	Estimate
TOC	00680	---	---	---	50	1/month	Grab
Oil and Grease	03582	---	---	---	15	1/month	Grab
Total Antimony	01097	---	---	---	Report	1/month	Grab
Total Arsenic	01002	---	---	---	Report	1/month	Grab
Total Lead	01051	---	---	---	Report	1/month	Grab
Total Zinc	01092	---	---	---	Report	1/month	Grab
pH Minimum/Maximum Values (Standard Units)	00400	---	---	6.0 (*2) (Min)	9.0 (*2) (Max)	1/month	Grab

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 003, at the point of discharge into Bayou Baton Rouge from the drainage ditch running north from the old equipment storage area behind the #2 warehouse prior to combining with the waters of Bayou Baton Rouge or any other waters.

FOOTNOTE(S):

(*1) When discharging.

(*2) The permittee shall report on the Discharge Monitoring Reports both the minimum and maximum instantaneous pH values measured.

LOUISIANA WATER POLLUTION CONTROL FEE SYSTEM
RATING WORKSHEETPERMIT NO. LA0004464 AI NO. 1396 ACTIVITY NO. PER20050007

- 1.a. Company Name Exide Technologies, Inc.
- 1.b. Facility Name Baton Rouge Smelter
2. Local Mailing Address Post Office Box 74040
Baton Rouge, Louisiana 70807
3. Billing Address (If different) _____
- 4.a. Facility Location 2400 Brooklawn Drive in Baton Rouge
- 4.b. Parish East Baton Rouge
5. Facility Type Secondary lead smelter
6. Products Produced _____
- 6.a. Raw materials stored or used _____
- 6.b. By-products produced _____
7. Primary SIC Code 3341 7.a. Other SIC Codes _____
8. Fac. Manager Tim Harris 8.a. Telephone (225) 775-3040, ext. 157
9. Owner _____ 9.a. Telephone _____
10. Env. Contact Ed Hardy 10.a. Telephone (225) 775-3040, ext. 132

- | | |
|--------------------------------|---------------------------------------|
| 11. State Permit No. _____ | 12. LPDES Permit No. <u>LA0004464</u> |
| 11.a. Date Issued _____ | 12.a. Effective Date <u>04/01/01</u> |
| 11.b. New _____ Modified _____ | 12.b. Expiration Date <u>03/31/06</u> |

13. Number and Identification of Outfalls 001-non-contact cooling water, VSA 02 plant overflow, post first-flush sw, and previously treated effluent from 101 (comprised of combined treated process ww, san. ww, leachate from a closed and active solid waste landfill, first-flush sw, and leachate from post-closure hazardous waste piles nos. 1 and 2 and 003-non-process area sw
14. Number of Injection Wells N/A
15. Water Source(s) _____
16. Receiving Water(s) Bayou Baton Rouge
- Is receiving water:
- a. Public Water Supply Yes _____ No ☒
- b. Designated Water Quality Limited Yes ☒ No _____
- c. In Compliance with Water Quality Standards Yes _____ No ☒
17. River Basin Mississippi River 18. Basin Segment No. 070203

TOTAL RATING POINTS ASSIGNED

88.5

Federal Tax I. D. No.:

sl Initials of Rater